

ANNUAL REPORT  
OF  
THE MILITIA COUNCIL  
FOR THE  
DOMINION OF CANADA  
FOR THE YEAR ENDING DECEMBER 31  
1905

*PRINTED BY ORDER OF PARLIAMENT*



OTTAWA

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EXCELLENT MAJESTY

1906







*To His Excellency the Right Honourable Sir Albert Henry George, Earl Grey, Viscount Howick, Baron Grey of Howick, in the County of Northumberland, in the Peerage of the United Kingdom and a Baronet; Knight Grand Cross of the Most Distinguished Order of Saint Michael and Saint George, &c., &c., Governor General of Canada.*

MAY IT PLEASE YOUR EXCELLENCY:

The undersigned has the honour to present to Your Excellency the Report of the Militia Council for the year ending December 31, 1905, such report being that of the Department of Militia and Defence of the Dominion of Canada, for the period above stated.

Respectfully submitted,

F. W. BORDEN,  
*Minister of Militia and Defence.*

DEPARTMENT OF MILITIA AND DEFENCE,

OTTAWA, March 1, 1906.







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ANNUAL REPORT  
OF  
THE MILITIA COUNCIL  
FOR THE YEAR ENDING DECEMBER 31,  
1905

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March 1, 1906.

THE MILITIA COUNCIL.

1. Fourteen months have now elapsed since the constitution of the Militia Council, and the anticipations expressed in the report for 1904 of the advantages to be attained thereby have, it is believed, been fully realized.

2. While a vast amount remains to be done before the organization of the militia force can be considered altogether complete and business-like, still the experience of the past year gives every ground for hope of success in the future good administration of the force.

3. The Council has held, with few exceptions, weekly meetings throughout the year. These meetings, bringing together, at short intervals, the heads of branches to advise and consult with the Minister on questions of policy and the large questions arising in connection with the administration of the force, cannot but be beneficial in promoting efficient work in the department. There has been in Council the fullest discussion upon all subjects brought before it; records have been kept of the views expressed and of the reasons for the decisions arrived at. All branches of the department have thus been kept acquainted with measures proposed, and correspondence and references between them have been greatly lessened in consequence. Co-operation has been the keynote of the work of the whole office, which has correspondingly profited thereby.

4. An important question under the present system of administration is the control of expenditure. With the institution of the higher commands, held by officers having larger powers of administration, the question of financial decentralization is receiving careful consideration. If adopted, the powers to be given of authorizing expenditure of public funds will be clearly defined by explicit regulations both as to details and extent. To facilitate the preparation of such instructions, a detailed and accurate estimate of the various services required for the ensuing financial year has been submitted by each officer holding a command, and nothing above and outside of these detailed estimates will be sanctioned, except for services of a very urgent nature which would be prejudiced by delay.



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## MILITARY POLICY.

5. By far the most important event in 1905, from a military point of view, is the fact that the Dominion has taken over from His Majesty's regular troops the responsibility for the maintenance of the Imperial fortress of Halifax, N.S., the control of which is now entirely in the hands of Canada. It is intended, in the course of 1906, similarly to assume control of Esquimalt, for the financial expenditure on which the Dominion has already accepted the responsibility. Canada has thus relieved the British tax-payer of the burden of any military expenditure whatever for military purposes within her borders. On her part, the mother country has treated Canada with liberality, in handing over the fortresses free of charge, complete up to date, and fully equipped in every respect.

6. In June, 1905, the military members of Council submitted to the Minister a memorandum on general militia policy, which was approved by him and laid before parliament. To the carrying out of that policy the efforts of the department have been steadily directed with satisfactory results.

7. The additions to the active militia organizations in the North-west, therein contemplated, are making steady progress. Owing to lack of barrack accommodation, no increase of the permanent force in that portion of the country has yet been possible.

8. The increase of the permanent corps necessary to enable it to undertake the duties of finding the garrisons required for Halifax and Esquimalt has been practically carried out. Provision for some of the technical engineer duties alone remains to be made. It is hoped that little difficulty will be experienced, when once matters have settled down, in maintaining the garrison at its approved establishment.

## ORGANIZATION AND MILITARY TRAINING.

9. During the year the operations and staff duties division of the branch of the Chief of the General Staff has been organized. This division deals with the very important work of plans of defence, organization for field service and mobilization, as well as the training of the militia, field-days and manoeuvres, and the education of staff and other officers.

10. Good work has been carried out in all these branches, much of which, however, is necessarily of a confidential nature. Training questions have received special attention, as well as those affecting the instruction of officers.

11. In the direction of organization the most important step taken during the year past has been the grouping of the military districts of eastern Canada into higher units, known as 'Commands,' a step advocated by successive general officers commanding for years past. Thus Nos. 1 and 2 military districts became the Western Ontario Command; Nos. 3 and 4, the Eastern Ontario Command; Nos. 5, 6 and 7, the Quebec Command, and Nos. 8, 9 and 12, the Maritime Provinces Command.

12. The objects of this organization were, first, to afford selected officers of the militia practice in the higher duties of command and administration, by placing them in charge of large bodies of troops approximating to the commands which they would exercise in the event of war; secondly, decentralization, with the object of relieving militia headquarters of a great mass of detail questions which could be far better dealt with locally and, thirdly, the introduction of a system of administration which should be the same both for peace and war. Incidentally the creation of these commands opens up a far more attractive professional career for officers of ability than it has hitherto been possible to offer them.

13. The following staff officers and heads of departments were allotted for each of these commands:—

*Staff Officers—*

Chief staff officer.

Deputy-assistant-adjutant-general.



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*Heads of Departments—*

District Engineer.  
Senior Army Service Corps officer.  
Principal Medical Officer.  
Senior Ordnance Stores Corps officer.  
Senior Paymaster.  
Principal Veterinary Officer.

14. Of these the chief staff officer and senior paymaster represent the only new permanent appointments. Senior paymasters are not yet appointed for the Eastern Ontario and Quebec Commands.

15. For the military districts of the west the previously existing district officers commanding were retained. They have also been retained in military districts Nos. 1, 4, 7, 8 and 12, under the supervision and control of the officers holding the higher commands.

16. The change on the whole has worked well, especially so as regards some of the commands, but there have been instances where officers holding these superior commands have not perhaps fully appreciated their position or used those powers and assumed those responsibilities which they were intended to exercise and assume.

17. These defects have perhaps been especially noticeable in regard to courts-martial and correspondence, but they exist also in other graver matters. This fact in itself tends to show the wisdom of the step taken, for it is obvious that if such officers leave something to be desired in regard to the efficient performance of their duties of command in time of peace, they would fall far short of what was required in times of emergency or field service, when they would be called upon to exercise far wider powers and assume far more onerous responsibilities. Failure on such occasions might mean disaster for the country. Hence the necessity for practising the duties of higher command in normal times. It is felt that the experience to be gained therein by themselves, their staff officers, and heads of services, will certainly lead, as time goes on, to improvement in the expedition and accuracy with which the work in each command is carried out, and to greater interest in important questions with which they have hitherto hardly been asked to concern themselves, while the efficiency of the militia within the command, as well as economical and wise control of expenditure, will be increased accordingly.

18. Special attention has been devoted to improving the organization of the departmental services of the militia. These are the services which are performed by the Canadian Army Service Corps, the Army Medical Corps and the Ordnance Stores Corps.

The Army Service Corps is responsible for quartering, feeding and transporting the militia. The Army Medical Corps takes care of the sick and wounded. The Ordnance Stores Corps supplies the militia with clothing, artillery, small arms, ammunition, vehicles, accoutrements and equipment of all kinds.

19. Of these departmental services it has been truly said that without them an army cannot live, march or fight. Being less showy than the combatant branches, there is, in all armies, a tendency to keep them in the background in time of peace, and the militia has not been free from this defect in the past. Steady progress has been made during the year towards remedying the deficiency.

The report of the Director-General of Medical Services is published herewith as Appendix II.

20. The organization of the cavalry and artillery into brigades was effected during the year, a step which, it is anticipated, will be of benefit to the service in general, and more particularly to those individual branches.

21. The re-organization of the Royal Canadian Field Artillery as Horse Artillery was carried out during the year.



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## INTELLIGENCE.

22. The Intelligence Division of the branch of the Chief of the General Staff has worked satisfactorily during the past year. Reports on various subjects as required have been compiled and issued; useful information has been collected and tabulated and an intelligence diary has been kept up to date and circulated monthly.

23. The organization of the 'Corps of Guides,' working under the Intelligence Division, has made good progress. Regulations for its administration, establishment, pay and instruction, have been drawn up and issued. Special courses of instruction were held at the camps at Niagara, Ont., and Sussex, N.B., with satisfactory results. The large majority of the officers of the corps in districts east of the Great Lakes, have now received their special training. It is hoped that during the coming season it may prove feasible to extend this training to the officers in the west. Several useful reports have been furnished by officers of the corps, who have also given valuable assistance on various occasions in regard to questions involving local knowledge and inquiry.

24. The mapping-section of the Intelligence Division has been placed upon a sound footing and has done good work throughout the year, under somewhat difficult conditions. The transit and level parties have run 1,100 and 1,300 miles of line, respectively. The topographers have completed 1,775 square miles of accurate survey, an excellent record in view of the absence of any general topographical survey of Canada, or of any framework of triangulation, to which their work could be referred. The surveys executed by this section constitute the only maps of Canada which record the physical features of the country, information essential for military purposes. In addition to the above work, several surveys have been made of special areas, notably of the new Petawawa camp ground, and the Sussex and Aldershot camps, all of which have proved valuable to the militia. The sheets of the regular survey now in the hands of the lithographers will, it is hoped, prove, when published, equally acceptable to the general public.

## ANNUAL CAMPS.

25. A memorandum for camps of instruction, comprising regulations for command and administration, together with a syllabus of the course of instruction for each arm of the service, was issued for the annual camps. The intention of the syllabus was to cut out many of the less important sections of the drill books, so as to enable more time to be devoted to the essential portions of military training. It was, also, so arranged as to admit of progressive training and to give time for greater attention to musketry than hitherto. A revised, and it is hoped improved, memorandum is being prepared for the camps of 1906.

## DATES FOR CAMPS.

26. During the camps advantage was taken of the opportunity to consult commanding officers as to the dates most convenient for the units under their command to attend camp.

Practical unanimity was found to exist among commanding officers at the various camps as to the most convenient dates for their districts, and it is proposed to adhere to these dates in future.

## NUMBERS PRESENT.

27. The attendance at annual drill, and especially at the camps of instruction, has been highly satisfactory during the past year. Indeed, the total number of men trained reached a higher figure by 4,900 than that of any previous year. This was no doubt



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largely attributable to the system of 'efficiency pay' introduced in 1904, which induces good men to re-engage.

A tendency was, however, noticed in some cases to interpret too loosely the conditions upon which alone efficiency pay is authorized. Steps are being taken to ensure that in future its issue shall be strictly confined to men who are really efficient militiamen.

It is an unfortunate fact that the obligation upon which a man enters when he engages to serve for three years in the militia has in effect been allowed to become a dead letter. The engagement is purely a voluntary one, but is undertaken on oath, and to treat it as practically null is demoralizing to the country generally, as well as disastrous to the militia. If it is not to be enforced it should not be exacted.

Far too many instances occur in which men are picked up at the last moment at haphazard, and taken to camp in order to fill up vacancies. The class of man thus obtained is often undesirable and it is but too clear that abuses have been allowed to creep up in this respect.

## LENGTH OF TRAINING.

28. It is useless to ignore the fact that it is not possible to teach the soldier enough in twelve days to make him reasonably efficient under modern conditions of warfare. This is true of the infantry and still more so of the other arms. If it is impossible to give a longer period for training generally, the cavalry, artillery and engineers, at any rate, should be allowed sixteen days training annually. For engineers the extension is especially necessary. Sixteen days training were allowed for the artillery, with excellent results.

## ADMINISTRATION.

29. A re-arrangement of the system of staff work in the camps was effected, under which the work of the general and administrative staffs was separated, the duties of each being defined in detail. This re-arrangement, modelled on the same lines as the organization of the headquarters staff at Ottawa, worked successfully. It is based on the sound principle that the staff system pursued in peace ought to be that which would be followed in war.

The training at camps came directly under the officers holding the higher commands, and the advantages thereby gained were apparent. These officers were able to inspect the different camps in their own area with a thoroughness which, owing to the wide distribution of the camps and to their being held at nearly the same time, it was impossible for the headquarters staff or that of the Inspector-General to emulate.

## CAMP GROUNDS.

30. One great drawback to the usefulness of the annual camps has been the lack of rifle range accommodation. At Kingston, Sussex and Laprairie there were no rifle ranges, though one will be available at Sussex for 1906. Attempts were made at the two former places to fill the want as much as possible by the use of the sub-target gun, and by miniature cartridge practice, but these cannot take the place of service cartridge practice. The rifle range accommodation at Niagara-on-the-Lake was totally inadequate, while that at Lévis and London was hardly sufficient, though the work done at the latter place was good.

31. Ottawa and Aldershot alone afford ample accommodation for this most important branch of a soldier's training.

32. Want of sufficient space for training was another common defect at the camps. The experience of recent wars has shown that 'effective' ranges for the rifle begin at 1,400 yards, and for the gun at two miles. There was no camp at which troops could be practically shown what these ranges meant. Niagara-on-the-Lake has not sufficient



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space for the proper training of a single brigade, but failing any other camp ground in No. 2 military district it was necessary to assemble there three brigades of infantry, as well as one of cavalry, besides artillery and other arms.

33. It is hoped that the acquisition of a suitable training ground, with ample rifle range accommodation, for the troops in the Western Ontario command is not far distant.

34. As regards cavalry and artillery, both arms were seriously hampered by the want of sufficient training space. The result of this was shown on the tactical field-days by cramped action on the part of the cavalry, while the artillery had practically no chance of working as they would in the field, until the artillery practice camp at Petawawa.

35. This was the first occasion upon which the new central camp, acquired during the year, was used. It is situated in the county of Renfrew, near Pembroke, on the line of the Canadian Pacific Railway, and is, roughly speaking, about eight miles by ten. It lies upon the Ottawa river, and affords excellent ranges for both artillery and infantry. There is but one opinion as to the advantages of the site for training purposes. Steps are being taken to prepare it for regular occupation, and it is hoped that it will be possible to assemble there, in the summer of 1906, not only a large proportion of the permanent force, but also a provisional school of instruction for officers and non-commissioned officers.

#### KINGSTON CAMP GROUND.

36. This ground is not satisfactory, and complaints were made by the troops in camp. The unsatisfactory drainage of the present camp site was brought to notice by the principal medical officer, and the rifle range adjoining has been condemned as unsafe. It is situated at one end of the district, thereby entailing unnecessary transport.

#### LAPRAIRIE CAMP GROUND.

37. This ground proved unsatisfactory this year, owing to much rain falling during the camp. The ground became a quagmire and proved most uncomfortable for men and horses. It will always be so unless properly drained. But, on the other hand, the troops did not use the ground available to the best advantage.

#### ALDERSHOT CAMP GROUND.

38. This ground is most satisfactory. The work done upon it during the last year has improved it very much, and, when a sod is obtained, it will be an ideal camping ground.

### TRAINING—ACTIVE MILITIA.

39. Infantry Training, 1905, and Combined Training, 1905, have now been adopted as the official text-books for drill and training. Constant change of drill books is undesirable, but the present issue is a considerable improvement upon that of 1902; it is much simpler, it embodies the result of the lessons of the South African and Russo-Japanese wars, and it is understood that the Imperial authorities consider that no new issue is likely to be necessary for many years to come.

40. Speaking generally, the training of the troops, in spite of the interest evinced by them, left much to be desired. There is still too great a tendency to keep to mere drill, and to work always on the level parade grounds, instead of exercising the men outside of camp, in the far more valuable work of attack and defence, and thus



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utilizing their powers of initiative and self reliance. Many officers showed lack of confidence in themselves and in their power to command their men.

41. It was observed with satisfaction that attention was being paid to reconnaissance work, that most important duty of cavalry.

Tasks in reconnaissance, set by the Chief of the General Staff at his visits, were executed by nearly all mounted corps in camp, and several promising reports were submitted.

42. There was, however, a tendency noticeable, especially at the camp at Laprairie, to devote too much time to purely formal parade movements, to the exclusion of the really important training in manoeuvre and outpost work. Canada, except on the great plains of the North-west, is a difficult country for large bodies of cavalry to work in. Special attention should, therefore, be paid to detached duties and the technical handling of small bodies in inclosed country.

43. A system under which cavalry corps carried out the shoeing of their own horses in camp was introduced in 1905 with very promising results. It is evident that a cavalry corps which cannot shoe its own horses is unfit for the field, but no practical system for shoeing the horses of mounted units on service appears to have been hitherto introduced.

## ARTILLERY.

44. Considering the disadvantages under which they have laboured, the artillery deserve credit for the manner in which their training was carried out. This was especially the case in camps where capable officers, as officers commanding artillery brigades, were available for supervision.

45. The four days' extra training allowed for this arm in 1905 was, in the case of field artillery, devoted to artillery practice and field training at the new central camp at Petawawa with excellent results. This being almost the first occasion upon which the field artillery have been able to practise under conditions approximating to service conditions, good practice was hardly to be expected. This was perhaps largely due to the fact that the ranges were entirely different from any hitherto used by the field artillery in Canada. There is no doubt, however, that the batteries present learned far more of what they would experience under service conditions than at any previous camp. The instruction of gun-layers was carried on with satisfactory results.

46. A falling off in the manœuvring power of the batteries was reported, as compared with previous practice camps. This was, no doubt, due partly to the new conditions, and partly to batteries having trained only at local headquarters.

47. The training of the 1st 'Halifax' and 5th 'British Columbia' Regiments, Garrison Artillery, was carried out under the supervision of the officers commanding Royal Artillery at Halifax and Esquimalt, respectively, with the armament which they would man on mobilization.

48. The remainder of the garrison artillery carried out their training as heavy and movable armament artillery, with 4.7 Q. F. and 40-pr. R.B.L. guns on travelling carriages.

49. It is hoped that in 1907 the 6th Regiment Garrison Artillery, may be able to train as coast artillery, with modern guns on fixed mountings.

50. The reports upon the training and practice of the 1st and 5th Regiments, are creditable to both corps. The work is reported to have been well done, but rather too slowly for service conditions.

## ENGINEERS.

51. The engineer arm has suffered, hitherto, from having to teach too much in the limited time available, and, also, to some extent, from an attempt to combine a qualifying course for officers with the annual training.



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52. The four field companies in Canada have had their training equipment issued since last year, of which good use was made during their training in camp. They still lack service equipment, and, consequently, are not at present in a position to take the field in their proper capacity.

53. The syllabus for the complete training of a field company is so extensive that it cannot be carried out in twelve days, except in a superficial way. It will probably be found necessary to divide the syllabus into two or more parts, and to instruct in only one part at each year's training.

The engineers promise well, however, and it is hoped to avoid this difficulty in the future.

#### INFANTRY.

54. The general principle of the syllabus drawn up for the infantry was to eliminate mere parade movements and to give enough elementary drill to enable brigadiers and regimental commanders to get their troops into fighting formation and to manœuvre them properly therein. The results were promising, but it was difficult to get officers to abandon elementary drill or to assert themselves enough and to handle their men properly at field manoeuvres.

#### DEPARTMENTAL SERVICES.

55. The Army Service Corps worked admirably, and, wherever they were given control of the supplies, with excellent results.

The medical services were very efficient, and the hospitals well cared for.

The Ordnance Stores Corps worked well.

Unlike the other arms, the daily work of the departmental services is nearly identical in peace and war, and their efficiency profits proportionately in that the practice of their daily work in camp is their best training for war.

#### CITY CORPS.

56. Most of the foregoing remarks, though especially referring to corps attending camp, are of general application. At the same time the training of the city corps generally is reported by the Inspector-General to show steady progress. There is still too much attention to mere drill hall and ceremonial drill and too little practical training on open and varied ground, where the natural aptitude of men for military work can be developed. Target-practice returns show fair progress. It is to be regretted that 'Judging-Distance Practice,' which is essential to the effective use of the rifle in the field, has received little attention hitherto, either from city corps or from corps attending camp.



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57. The number of officers and men trained in district camps is as follows:—

Military District.	AUTHORIZED ESTABLISHMENT.			RECEIVED 12 DAYS TRAINING.			RECEIVED UNDER 12 DAYS TRAINING.			UNTRAINED.		
	Officers.	N. C. Officers and Men.	Horses.	Officers.	N. C. Officers and Men.	Horses.	Officers.	N. C. Officers and Men.	Horses.	Officers.	N. C. Officers and Men.	Horses.
No. 1 . . . . .	296	3,109	633	113	1,595	320	95	1,306	222	88	208	91
2 . . . . .	741	6,281	1,332	348	4,609	1,035	65	461	37	328	1,211	260
3 . . . . .	297	2,782	847	220	2,410	714	5	6	6	72	366	127
4 . . . . .	162	1,798	505	122	1,626	395	8	7	4	32	165	106
5 . . . . .	173	1,766	1,696	143	1,681	1,571				30	85	125
6 . . . . .	170	1,622	137	119	1,537	58	8	3		43	82	79
7 . . . . .	250	2,520	108	212	2,263	96		1		38	256	12
8 . . . . .	213	2,154	600	186	2,068	512				27	86	88
9 . . . . .	249	2,574	406	203	2,405	322	2	5	2	44	164	82
10 . . . . .	60	594	577	46	545	524	1	10	11	13	39	42
11 . . . . .	36	311	3	18	280	3		7		18	24	
12 . . . . .	55	552	80	49	534	78		13		6	5	2
Totals . . .	2,702	26,063	6,924	1,779	21,553	5,628	184	1,819	282	739	2,691	1,014

58. The number of officers and men of city corps trained during the year is as follows:—

Military District.	AUTHORIZED ESTABLISHMENT.			RECEIVED 12 DAYS TRAINING.			RECEIVED UNDER 12 DAYS TRAINING.			UNTRAINED.		
	Officers.	N. C. Officers and Men.	Horses.	Officers.	N. C. Officers and Men.	Horses.	Officers.	N. C. Officers and Men.	Horses.	Officers.	N. C. Officers and Men.	Horses.
No. 1 . . . . .	153	1,148	18	86	1,074		4		16	63	74	2
2 . . . . .	369	3,519	75	216	3,414	27	5	25		148	80	48
3 . . . . .	96	912	15	79	883	14	1			16	29	1
4 . . . . .	118	939	11	89	939	5				29		6
5 . . . . .	258	2,458	145	171	2,347	97		30		57	81	48
6 . . . . .	44	415	8	35	392	7				9	23	1
7 . . . . .	132	1,270	165	74	1,156	159				58	114	6
8 . . . . .	58	544	7	44	529	7				14	15	
9 . . . . .	133	1,390	20	99	1,141	13		86		34	163	7
10 . . . . .	48	372	4	28	311		3	42		17	19	4
11 . . . . .	87	740	4	53	499	4		74		34	167	
12 . . . . .	12	220		12	209			7			4	
Totals . . .	1,508	13,927	472	986	12,894	333	13	264	16	509	769	123



TOTAL TRAINED.

59. The total number of officers and men trained in district camps and at local headquarters during the year is as follows :—

	AUTHORIZED ESTABLISHMENT.			RECEIVED 12 DAYS TRAINING.			RECEIVED UNDER 12 DAYS TRAINING.			UNTRAINED.		
	Officers.	N. C. Officers and Men.	Horses.	Officers.	N. C. Officers and Men.	Horses.	Officers.	N. C. Officers and Men.	Horses.	Officers.	N. C. Officers and Men.	Horses.
Dis. Camp . .	2,702	26,063	6,924	1,779	21,553	5,628	184	1,819	282	739	2,691	1,014
Local Head-quarters . .	1,508	13,927	472	986	12,894	333	13	264	16	509	769	123
Totals . .	4,210	39,990	7,396	2,765	34,447	5,961	197	2,083	298	1,248	3,460	1,137

TRAINING PERMANENT FORCE.

60. It is upon the standard of efficiency attained by the permanent force that the efficiency of the active militia ultimately depends. It is the duty of the permanent force to supply instructors, both officers and non-commissioned officers, for the corps of the active militia, as well as to carry on courses at the schools for those attached for instruction. It is therefore essential for the good of the active militia to secure real efficiency in all units of the permanent force.

61. Of late years a tendency has been noticeable to draw a distinction between the permanent force units, as such, and the schools of instruction. This has conduced to the school cadres receiving special care and attention, while the efficiency of the permanent units on which the schools depend has tended to become a secondary consideration. This is essentially unsound, because the schools draw their instruction and educational value entirely from the permanent units, not the least important part of which education is its regimental life, discipline, and internal administration, upon which, as well as upon military training, war efficiency largely depends.

Hitherto the establishments of units of the permanent force have been kept at such a low figure that it has hardly been possible for the officers to train their men properly, and yet at the same time carry on the administrative arrangements required for the conduct of the school. The question of the establishments necessary for this purpose has received the careful attention of the Militia Council, and new establishments have been sanctioned which will tend to greater efficiency.

It may be taken as an axiom that an efficient unit is essential to the maintenance of an efficient school.

62. The training of the permanent units has hitherto suffered also from their individual isolation and want of experience of combined training. A specific period should be set aside each year for the field training of the permanent units themselves. This was done during the past year with the Royal Canadian Engineers, who were encamped at Lévis, Quebec. With the acquisition of the central camp at Petawawa new opportunities for combined training are offered, of which it is hoped to take full advantage in the future. The Royal Canadian Horse and Garrison Artillery were the only arm which was able to take advantage of that camp during the past year.



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## MOUNTED UNITS.

63. The training of the Royal Canadian Dragoons and Royal Canadian Mounted Rifles, in addition to the constant handicap of small establishments, especially as regards horses, suffers also from the want of sufficient training ground. Mounted troops cannot train effectively on ground limited to a few acres. Under present conditions this defect cannot perhaps be remedied. The only course to pursue is to endeavour to get as efficient training as possible while in camp. Commanding officers are fully alive to this.

## ARTILLERY.

64. As above stated the Royal Canadian Artillery alone of the permanent force were able to take advantage of the acquisition of Petawawa camp. Even with them the training suffered from the lateness of the date at which the ground became available for use.

The Royal Canadian Horse Artillery practised with 12-pr. B.L. guns, the Royal Canadian Garrison Artillery with 4.7 Q.F., the latter for the first time.

65. While certain deficiencies and defects in the *matériel* became evident, which it is hoped to remedy before camp in 1906, and while the practice made was hardly satisfactory in either case, yet much must be attributed to the novel character of the ranges and the new conditions under which the batteries and companies worked. There is no doubt that both branches of the Royal Canadian Artillery learnt far more of what they would have to do on service than at any previous camp, and the results obtained gave promise of considerable improvement in the future.

66. The Royal Canadian Garrison Artillery, Quebec, worked hard during the year preparing themselves to take over the duties of the artillery garrison at Halifax.

## INFANTRY.

67. The Royal Canadian Regiment has had, during 1905, many difficulties to contend with, in endeavouring to expand its previous very small establishments sufficiently to undertake the infantry garrison of Halifax. That it has been able to do this at all is much to its credit. The establishments, however, are not yet by any means complete, and to attain efficiency during 1906 will entail hard work and self-sacrifice.

## ENGINEERS.

68. As already mentioned the Royal Canadian Engineers trained in camp regimentally, as one body, at Lévis, during the autumn.

The camp lasted for five weeks, one of which was devoted to musketry. One section was trained in field-telegraph cable work, which was used for the first time in Canada. In this they worked creditably, considering that both men and horses were entirely new to the work, with the exception of two telegraph operators.

An attempt was made to cover the first five parts of instruction in military engineering, viz.:—

Part I. Field Defences.

Part II. Attack and Defence of Fortresses.

Part III. Military Bridging and the use of Spars.

Part IV. Mining and Démolition.

Part V. Miscellaneous.

and field engineers drill, but the time was wholly insufficient to do this in a thorough manner, though the corps received a fair general knowledge of the whole work.

69. This camp offers the only opportunity which the Royal Canadian Engineers have to carry out military engineering work, their whole time in barracks being taken up in the work of their trades.



It is hoped to arrange for a larger autumn training in camp during 1906.

70. The taking over of Halifax has been a great strain on the corps, but there seems every prospect of its carrying out its new duties with success.

SCHOOL OF MUSKETRY.

71. The work of the Canadian School of Musketry was carried out fully as satisfactorily as in any previous year. There was only one term of the school, owing to the necessity of utilizing the staff in the assembling of the new garrison at Halifax; and the number of officers and non-commissioned officers applying for courses was limited owing to the uncertainty, up to two weeks before the commencement of the course, whether a course could be held or not.

Officers attending.. . . .	33
Warrant officers and non-commissioned officers .. . . .	22
Total.. . . .	55
Officers obtaining certificates.. . . .	26
Warrant officers and non-commissioned officers.... .	14
Total.. . . .	40

MUSKETRY.

72. On the whole, fair progress has been made in musketry training during the year: Failure to achieve greater results has been due rather to the defective range accommodation at camps, already referred to, than to want of zeal on the part of the troops or their instructors. At the same time it must be admitted that it is not possible to give the militia soldier anything more than the most elementary training in military duties, drill and musketry during the nine working days of camp. The city corps are usually in a better position in this respect, and in several cases have done their musketry training with thoroughness. More training at moving targets is desirable, however. Judging-distance practice is seldom if ever attempted.

RIFLE ASSOCIATIONS.

73. The membership and number of rifle associations are still increasing. The number of rifle associations gazetted to date are, approximately:—

Military.. . . .	106
Civilian.. . . .	320
Total.. . . .	426

with a membership of:

Military.. . . .	12,658
Civilian.. . . .	19,355
Total.. . . .	32,013

The increases during the year were:—

Military associations.. . . .	13
Civilian associations.. . . .	65
Total.. . . .	78

Increase of membership being 4,151.



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74. Certain associations which were not able to keep up their membership, or whose affairs were not satisfactory, have been disbanded. But the interest taken in these associations is still keen, and will probably continue to be so. The great drawback is the difficulty of obtaining rifle range accommodation of a permanent nature, it being impossible for the government to provide each of these small associations with a government rifle range.

## RIFLE RANGES.

75. The rifle ranges completed during 1905 were the following :—

Bridgetown, N.S.  
Goderich, Ont.  
Vancouver, B.C.

Cobourg, Ont.  
Port Hope, Ont.  
Sussex, N.B.

and extensions were carried out at Hamilton; Long Branch, Toronto; Woodstock, N.B., and Montreal.

## SAFETY OF RIFLE RANGES.

76. There has been, and probably will continue to be, considerable difference of opinion as to what is a safe rifle range. A rifle range which is perfectly safe for all practical purposes to the skilled shot is not always a safe range when used by the novice. Untrained shots become a menace to the contiguous districts, even on a normally safe range. If, however, the men using the range have been put through a proper preliminary training, it is possible for them to use, with safety, ranges which would otherwise be very unsafe. Under these circumstances there seems to be no other way of managing the rifle ranges of rifle associations than to make the association officers personally responsible that no shooting is carried on, especially at long ranges, by men who are in the least liable to miss the stop-butt.

## SUB-TARGET GUN.

77. This gun has been used at the various camps of instruction. There can be no doubt that when officers and non-commissioned officers are thoroughly competent to teach their men musketry a very large amount of extremely good work can be done with this gun. Want of time, however, is the main difficulty, as time is not really available at camp for this work, and the time taken at the sub-target gun in camp is often so much time taken away from practice at the targets. The sub-target gun is eminently a gun for use in winter under cover; it requires, however, to be supported by good arrangements as to light.

The gun was a marked success at the camp of No. 4 military district, where a trained sergeant from the Canadian School of Musketry had charge.

## SIGNALLING.

78. For, it is thought, the first time, the question of signalling instruction at camps was taken up as a practical question during the past year. The establishment of the Corps of Signallers has been settled and regulations laid down for its guidance and administration.

79. As it is almost impossible to instruct rural corps in flag and lamp signalling in 12 days' annual training, it was decided to restrict those corps to semaphore signalling, and to instruct the permanent force and city corps only in flag and lamp signalling. The introduction of this system has worked well, and the progress made in semaphore signalling by the rural corps has been highly satisfactory.



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80. Flag and lamp signalling have been practised by the city corps, several of which have attained very creditable results, as shown by the marks obtained at the examinations. The 13th Regiment obtained the highest place, with the 43rd 'Duke of Cornwall's Own Rifles' second, and the 2nd Regiment 'Queen's Own Rifles of Canada' third. In semaphore signalling 546 officers, non-commissioned officers and men of rural corps were trained, of whom 68 per cent passed the test examination.

### ESTABLISHMENTS—PERMANENT FORCE.

81. In consequence of the decision of the Dominion government to assume, with the consent of the Imperial authorities, the entire defence of the Dominion, an increase of the permanent force was authorized from 2,000 to (if necessary) 5,000 of all ranks, and recruiting was actively commenced in the month of April last for the additional force required in connection with the garrison at Halifax. The recruiting was satisfactory in point of numbers, and the class of recruits obtained was good, their physique being much above the average for infantry of the line.

Owing to this large augmentation, it was necessary to obtain, for service in the permanent force, a few officers, non-commissioned officers and men from the Imperial army. The Imperial government granted the non-commissioned officers and men free discharges, with permission to enlist in the permanent force, the Dominion government undertaking to give them in the permanent force the rank they held in the army, and to count their army service towards pay, promotion and pension, the portion of the pension earned in the army to be borne by the Imperial government.

Two additional companies are in process of formation to replace the two companies of the Royal Canadian Garrison Artillery sent to Halifax from Quebec.

An increase in the strength of the Royal Canadian Engineers was authorized.

Five additional companies were added to the Royal Canadian Regiment, and are now being organized to reinforce the five old companies, which were recruited as nearly as possible to their full strength.

Upon the augmentation of the Royal Canadian Regiment it was found necessary to appoint a commanding officer, its administration from headquarters being no longer desirable with its increased establishment. An officer was accordingly selected and appointed to the command.

It was considered advisable to organize a corps of military staff clerks as a separate unit of the permanent force, with a strength of one warrant officer and thirty staff-sergeants and sergeants.

82. The following return shows the state of the permanent force on December 31, last:—



Name of Corps.	Authorized Establishment.	Strength on December 31, 1904.	Strength on December 31, 1905.	BECOME NON-EFFECTIVE.										ENROLLED.					COMPOSITION OF PRESENT CONTINGENT AS TO LENGTH OF SERVICE.					Serving with Pension from Imperial Government.
				Discharged by Purchase.	Discharged—Unsuitable.	Discharged Invalid.	Discharged Time Expired.	Deserted.	Died.	Transferred.	Totals.	Enlisted.	Re-enlisted.	Transferred.	Returned from Desertion.	Totals.	Under 1 Year.	1 to 2 Years.	2 to 3 Years.	Over 3 Years.				
Royal Canadian Dragoons . . . . .	364	90	124	12	1	1	15	41	1	2	73	99	4	4	4	107	66	13	12	33	1			
Royal Canadian Mounted Rifles . . . . .	120	55	95	7	3	1	1	28	1	1	43	79	5	4	4	83	61	17	4	13	1			
Royal Canadian Horse Artillery . . . . .	395	168	256	11	8	3	12	87	3	7	131	199	5	1	11	219	128	39	10	79	1			
Royal Canadian Garrison Artillery . . . . .	1,079	167	456	3	13	1	15	54	3	1	89	368	1	1	9	378	207	25	42	182	8			
Royal Canadian Engineers . . . . .	368	16	185	4	2	1	20	20	1	3	38	205	1	1	1	207	114	16	5	50	1			
No. 1 Depot . . . . .	126	57	45	2	4	1	5	34	1	92	138	113	2	6	5	126	29	4	12	12	1			
2 " . . . . .	123	87	83	3	4	1	9	59	1	163	240	177	1	47	12	236	48	2	5	28	1			
3 " . . . . .	126	59	32	3	11	4	2	52	1	96	169	134	4	1	3	142	19	1	3	10	1			
4 " . . . . .	718	62	552	6	13	1	7	61	1	6	94	187	1	388	9	584	356	78	39	79	11			
5 " . . . . .	121	87	31	3	2	1	4	42	1	105	156	91	1	2	6	100	16	2	4	9	1			
Can. Per. Army Service Corps . . . . .	138	3	44	1	1	1	1	1	1	1	2	41	1	2	1	43	38	2	2	2	1			
Permanent Army Medical Corps . . . . .	127	33	46	4	6	1	1	3	1	4	18	14	2	15	1	31	19	11	2	14	1			
Ordnance Stores Corps . . . . .	134	75	89	1	2	1	1	2	2	1	8	21	1	1	1	22	17	3	51	18	10			
Corps of Military Staff Clerks . . . . .	31	20	20	1	1	1	1	1	1	1	1	4	1	16	1	20	6	2	2	10	1			
Totals . . . . .	3,970	959	2,058	60	70	11	71	492	14	481	1,199	1,732	18	484	64	2,298	1,124	214	181	539	32			



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## ACTIVE MILITIA (OTHER THAN PERMANENT FORCE).

83. In order to secure as far as possible uniformity in the strength of cavalry and mounted infantry units it was decided that the normal establishment of each mounted unit should be four squadrons. Corps, however, that had already been organized with five squadrons were permitted to remain at that strength.

84. During the year the following changes in the organization of militia units, other than the permanent force, were authorized, viz.:—

(a) An additional squadron to the 5th 'The Princess Louise Dragoon Guards.'

(b) Two additional squadrons to the 10th 'The Queen's Own Canadian Hussars.'

(c) One additional squadron to the 14th King's Canadian Hussars.

(d) Two new cavalry regiments were also authorized in the province of Alberta and Saskatchewan, one as the 15th Light Horse, and the other as the 16th Mounted Rifles.

(e) Three new squadrons of the Canadian Mounted Rifles were also authorized in the North-west.

(f) The 6th field battery was reorganized.

(g) The 96th 'The Lake Superior Regiment,' with headquarters at Port Arthur, was authorized, as also the organization of an infantry regiment in Saskatchewan.

(h) Three additional companies of the Canadian Army Service Corps were authorized.

(i) The following corps were disbanded:—

'G' Squadron, Canadian Mounted Rifles, and the Dawson Rifle Company.

85. During the past year the organization of eighteen new cadet corps was authorized; twelve cadet organizations were disbanded, leaving a net increase of six over the number existing on December 31, 1904.

86. A permanent pensions claim board was appointed at headquarters, to deal with claims arising under the Militia Pension Act, and claims for compensation for injuries or illness not covered by regulations.

## APPOINTMENTS.

87. The following are the more important appointments made during the year:—

(a) Militia Council: The appointment of accountant was merged into that of accountant and paymaster-general, on the organization of a pay department for the militia and the assumption of extended responsibilities for audit.

(b) Headquarters staff:—

*Branch of the Chief of the General Staff—*

Lieut.-colonel W. G. Gwatkin, p.s.c., was appointed director of operations and staff duties.

Major D. I. V. Eaton, p.s.c., Royal Canadian Horse Artillery, was appointed assistant-director of operations and staff duties.

The appointment of an assistant-director of intelligence was substituted for that of intelligence staff officer, held by Captain A. C. Caldwell, Royal Canadian Engineers.

*Branch of the Adjutant-General—*

The position of deputy-adjutant-general was abolished, and that of assistant-adjutant-general substituted; Major H. A. Panet, D.S.O., Royal Canadian Horse Artillery, was appointed to the position.

(c) Commands and military districts:—

*Western Ontario Command (including command of military district No. 2)—*

Colonel and temporary Brigadier-General W. D. Otter, C. B.

Chief staff officer, Lieut.-colonel S. J. A. Denison, C.M.G., Royal Canadian Regiment.



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*Eastern Ontario Command (including command of military district No. 3)—*

Colonel W. D. Gordon.

Chief staff officer, Lieut.-colonel V. A. S. Williams, Royal Canadian Dragoons.

*Quebec Command (including command of military districts Nos. 5 and 6)—*

Colonel L. Buchan, C.M.G.

Chief staff officer, Lieut.-colonel O. C. C. Pelletier.

*Maritime Provinces Command (including command of military district No. 9)—*

Colonel C. W. Drury, C.B.

Chief staff officer, Colonel J. D. Irving.

*Military district No. 7—*

Lieut.-colonel A. Roy, from the command of military district No. 6.

## ROYAL MILITARY COLLEGE.

88. Brevet Colonel R. N. R. Reade, p.s.c., vacated the appointment of commandant of the Royal Military College, and Lieut.-colonel E. T. Taylor, p.s.c., was appointed commandant in his place.

The annual report on the college is published herewith as Appendix III.

## INSTRUCTION.

89. Two examinations for promotion, under the same conditions as those of officers of the regular army, were held during the past year, viz.: in May and November, at the former of which twenty-seven officers presented themselves for examination, and at the latter, fourteen. As regards papers submitted by officers of the Canadian permanent force, the following extract from the report of the Director of Staff Duties, War Office, on the examination held in May, 1905, in subjects D (military history, military law, tactics, engineering and topography), and E (artillery), is of interest;

'Taking the sub-heads of D as a whole, the best of the twenty-seven officers of the Canadian permanent force was Lieut. J. L. H. Bogart, Royal Canadian Engineers, with 1243 marks. Taking into consideration the many disadvantages under which they laboured as compared with officers serving in England, the officers of the Canadian permanent force are to be congratulated on the result.

## \*Subject (E),—Artillery.

'Officers of the Royal Canadian Field Artillery. The general result very fair. This result would undoubtedly have been better but for the apparent fact that the Royal Canadian Field Artillery has not yet been equipped with certain appliances, such as "directors," "field plotters," &c. Officers consequently have had no opportunity of becoming acquainted with their use, so their knowledge of them is purely theoretical. Answers are generally clearly expressed.'

90. Long courses of instruction, one in March and one in September, were held at the Royal Military College, Kingston, with good results, largely due to the cordial co-operation of the commandant and staff of the college. It is hoped still further to extend this system of instruction, by holding a special short course for officers desirous of competing at the entrance examinations for the Royal Staff College, England.

91. The two long courses referred to resulted as follows:—

## March, 1905—

Total number who attended. . . . .	18
Total number of candidates preparing for promotion who did not take the examination. . . . .	4
Total number who passed the examination. . . . .	12



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September, 1905—

Total number who attended.. . . .	18
Total number of candidates preparing for promotion who did not take the examination.. . . .	8
Total number who passed the examination.. . . .	8

## INSTRUCTION IN ENGLAND.

92. Two officers of the Royal Canadian Artillery were sent to England to attend the gunnery staff course, but one of them was relieved from that course in order to attend the Royal Staff College.

## ENTRANCE TO STAFF COLLEGE.

93. In January, 1905, two officers were selected to attend the course of instruction at the Royal Staff College.

94. The Commandant of the College having reported that officers from Canada had found difficulty in keeping up during the course with the other officers studying at the college, from want of previous professional instruction, it was arranged with the Army Council that in future officers from Canada should be admitted only after qualifying at the entrance examination.

95. Two officers of the permanent force presented themselves for the entrance examination in August, 1905, but did not succeed in reaching the required standard, a result partly due to lack of facilities in this country for preparing for this examination which is somewhat severe. Officers of His Majesty's Imperial Army usually prepare for it with the assistance of specialists in their profession (army crammers), which gives them an advantage over Canadian officers, who are unable to obtain such assistance except in mathematics and languages.

96. The special short course at the Royal Military College, already referred to (paragraph 90), is designed to meet this difficulty as far as possible.

## TACTICAL FITNESS FOR COMMAND TEST.

97. Three officers, sent to England for the purpose, successfully passed the tactical fitness for command test.

## TRAINING.

*Schools of Instruction.*

98. The provisional schools authorized during the year were as follows:—

Cavalry—Brandon and Quebec.

Engineering—Niagara, Ottawa and Montreal.

Infantry—Montreal and Quebec

Medical—Ottawa.

Signalling—Ottawa.

Canadian Army Service Corps—Ottawa and St. John.

99. Following is a list of certificates issued to officers, non-commissioned officers and men of the active militia during the year:—



Arm and Station.	OFFICERS.				N. C. OFFICERS.				SIGNALLING.		ARMY SERVICE CORPS.		MUSKETRY.		Total.				
	Long Course.	Field Officers.	Captains.	Subalterns.	Technical Engineers.	Equitation.	Sergeant Instructors.	Sergeants.	Corporals.	Bombardiers.	Instructors.	Grade 'B'.	Asst. Instructors.	Grade 'B'.		Officers.	N. C. Officers.	Distinguished.	Qualified.
Royal School of Cavalry, Toronto . . .		12	19	36		9		19	16										1
Royal School of Cavalry, Winnipeg . . .		*10	19	114				16											1
Royal School of Artillery (Field), Kingston . . .	2		3	5				2											2
Royal School of Artillery (Garrison), Quebec . . .				10				5	17	22									3
Royal School of Infantry, London . . .		2	21	30				26	1										3
Royal School of Infantry, Toronto . . .	1	2	17	69				6	3										3
Royal School of Infantry, St. Johns . . .		13	16	33				14	3										3
Royal School of Infantry, Fredericton & Halifax . . .		2	9	26				15	4										3
Royal School of Infantry, Quebec . . .		14	25	49				4											3
Engineers (Provisional School) . . .				10															3
Corps of Guides (Provisional School) (Camp) . . .		10	25	22			6												3
Infantry (Provisional Schools) . . .											2	17	28	60	11	30			3
Signalling (Provisional Schools) . . .																			3
Army Service Corps (Provisional Schools) . . .																			3
Canadian School of Musketry . . .																			3
Medical Corps (Provisional Schools) . . .		5	30																3
Equitation (Boards of Examiners) . . .					75														3
Totals . . .	3	75	174	284	1081	8	108	58	22	2	17	28	60	11	30	19	21	6	1,049

\*2 infantry certificates.

45 infantry certificates.

13 infantry certificates.



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## MEDALS AND DECORATIONS.

100. Decorations and medals were issued during the year as follows:—

Colonial Auxiliary Forces Officers' Decoration.. . . .	45
Colonial Auxiliary Forces Long Service Medal.. . . .	121
Long Service and Good Conduct (permanent force).. . . .	3
General Service Medals.. . . .	11
North-west, 1885 . . . . .	7
Total.. . . .	187

## TRANSPORT.

101. The transport supplied by the various railway and steamboat companies has been on the whole good—a great improvement on the service formerly rendered, particularly by the passenger department.

The transport of horses is not yet all that it should be. The cars furnished were, in many cases, inferior. The running of the horse trains was slow and the engines badly handled by poor engine-drivers, who started and stopped the trains so abruptly that the horses were often injured, thereby causing unnecessary expense in claims against the public.

102. Wheeled transport has been fairly well registered, particularly in Ontario and the Maritime Provinces, but not yet in the province of Quebec. That supplied by the Canadian Army Service Corps at the camps was very satisfactory. As none was furnished by the artillery or cavalry this year, all the work fell upon the Canadian Army Service Corps.

## VETERINARY DEPARTMENT.

104. This branch has been put on a better basis by the appointment of principal veterinary officers in each of the higher commands. As these officers are to have the supervision of the other veterinary officers in the several commands, a marked improvement in this branch of the service may be looked for.

## RATIONS.

105. The rations supplied by the various contractors at the different depôts and in the several camps of instruction have been satisfactory—a marked improvement on former years, owing, no doubt, to the fact that the supply officers are now trained in judging supplies and have a knowledge of what they may insist on from the contractors.

## CAMP COOKING-RANGES.

106. A further supply of camp cooking-stoves has been obtained and distributed. They proved a great benefit wherever used, as the food cooked upon them was much more palatable than that cooked on the old pattern stoves usually supplied by the company commanders.



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## FUEL SUPPLY.

## BARRACKS.

107. A radical change has been made in the fuel supply. Wood, which was formerly used to a large extent by the permanent units has been abolished as a ration, and coal only will be used in future by them, except for kindling. This change should result in a large saving in the expense of heating the several barracks and quarters.

## FUEL FOR CAMPS.

108. The substitution of coal for wood at the annual camps will be made as soon as a sufficient supply of camp ranges is secured; this should save much fatigue duty in cutting and splitting the wood now supplied, to say nothing of expense.

## STORE BUILDINGS.

109. New buildings with magazine accommodation are in course of erection at Winnipeg and London. They will provide for a much-felt want at these stations. New buildings at Toronto and Montreal, delayed owing to difficulty in finding sites, are much needed. At Toronto the present old wooden buildings are out of date and inadequate to the wants of a large district. At Montreal, the stores are now kept at St. Helen's island, communication with which is completely cut off for weeks during spring and autumn, and sometimes during the winter as well.

110. At Halifax the transfer of the fortress from Imperial to Dominion charge will, it is hoped, provide additional accommodation for stores in the buildings now occupied by the Regular Army Ordnance Corps. At St. John an extension of the present building is needed. At Ottawa additional space is required for storage of clothing and for housing vehicles received over from the contractors. They are at present stored in the exhibition buildings, subject to removal when asked for, and entirely at government risk. The congestion cannot be relieved by transfer to out stations, as all are equally crowded.

## CAMP EQUIPMENT.

111. For the first time, probably, in the history of the department, it was possible during the recent camps to meet the demands of the troops assembled for annual drill. A reserve of camp stores is still needed to meet an emergency should one arise making it necessary to order the city regiments into camp. It must be remembered also that under new conditions an increased and varied supply of equipment is requisite. Much improvement, however, in this respect during recent years is apparent, but more care is necessary in demanding equipment for camp use.

## RIFLES.

112. Armourers were sent to camps of instruction to examine and make necessary repairs to arms in charge of the troops assembled. There is an apparent want of care on the part of the militia in looking after the arms issued; officers commanding do not exercise sufficient supervision; the regulations as to tampering with sights and exchanging bolts are not observed, and deficiencies of rifles from armouries are of frequent occurrence.



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113. Snider rifles, converted to the same length as carbines, are now being issued to cadet companies. They seem to be very suitable for the purpose, being much lighter than the Martini-Henry rifle, or any other arm heretofore issued.

114. The armourer section is kept fully employed, and this will continue so long as the present issue of rifles is in use. Many rifles must of necessity soon require brown-ing, and a large demand for new barrels, owing to repeated firing and neglect, must soon be expected.

### SMALL-ARM AMMUNITION.

115. Issues of small-arm ammunition .303 ball, were made during the year as follows:—

Militia units.. . . .	1,029,299
Rifle associations.. . . .	2,106,166
Military Rifle League.. . . .	91,200
Dominion Rifle Association.. . . .	92,820
Repayment.. . . .	352,230
Total.. . . .	3,671,715
Receipts from Dominion Arsenal during the year.. . . .	8,119,100

### NEW REGULATIONS.

116. Regulations for issue of clothing to the militia generally, were compiled, and issued during the year.

Regulations for the Ordnance Stores Corps were compiled and issued, and Equip-ment regulations are in progress.

### ARMAMENT OF THE MILITIA.

117. There are available at present, in the hands of troops and on store charge, sufficient magazine rifles and carbines to arm the whole of the militia. A considerable number of them, however, are Ross rifles Mark I., a weapon which though thoroughly serviceable, is to be replaced by Mark II., a considerably improved pattern. The bulk of the Ross rifles Mark I. is, therefore, to be held in reserve for use in case of emergency, and is not to be issued for the present, unless in very special cases.

From this it results that some few corps are not yet in possession of magazine rifles. It is hoped, however, that all corps will be armed with them by the end of the year.

118. Progress with the delivery of the Ross rifle has, owing to difficulties of manu-facture, not been as satisfactory as the expectations of the company had lead them to anticipate. The matter is receiving all care and attention, and any delay at present is to be accepted as precautionary. A much larger amount of work has been done by the company than the number of completed rifles delivered would lead one to expect.

119. The reserve of small-arm ammunition, although still much below the accepted proportion, has increased by nearly 4,000,000 rounds during the year.

120. The reorganization of the field artillery, and its allotment to brigades was authorized and partly completed, but the entire distribution of guns and equipment cannot be completed until such time as proper armoury accommodation is available.

It is intended to re-arm the field artillery with the most modern quick-firing guns, and a supply has been ordered. As a temporary measure, and to fit in with the future organization, the number of guns in a field battery has been reduced from six to four.



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121. The heavy field batteries have been organized on similar lines, and the 4·7 guns on travelling carriages have been distributed as far as possible.

122. The first lot of the new 18-pr. batteries are reported to be well under way, so far as guns and carriages are concerned. They are being made by Messrs. Vickers, Sons and Maxim. The limbers and wagons are to be made in Canada, but can hardly be said to have been commenced yet, though a large amount of material has been collected for them. This delay has been due to the non-receipt of working drawings and specifications from the War Office.

123. The whole of the approved armament of Halifax has been taken over at that place from the Imperial troops. It is complete and up to date.

124. The heavy armament for the sea defences of Quebec is under order. Delivery is expected before June 30, 1906.

## RESERVES OF ARMS AND AMMUNITION.

125. The approximate scales of reserves for guns, small arms and ammunition of all kinds have been laid down, but some considerable time must, in view of the requirements of the existing corps, elapse before any real progress can be made with that accumulation of reserves which is absolutely necessary in order to provide for an emergency.

## PATTERNS, PROVISION AND INSPECTION OF GUNS, SMALL ARMS, AMMUNITION, &amp;c.

126. The increasing necessity of providing sealed patterns for every article of an ordnance store nature, and for the systematic arrangement of such patterns in suitable pattern rooms, has not escaped attention, in view of the policy of manufacturing all articles in Canada for whose production proper facilities exist.

127. With regard to the provision and inspection of guns, so far all our ordnance has been obtained in England, mostly through the War Office, and inspected by the War Office inspectors. No doubt, however, the time is coming when we shall be able to have armament made in Canada, and when that time arrives, many questions relating to supply and inspection will have to be considered.

128. As regards inspection of small arms, an application was made to the War Office for the services of a duly qualified inspector, and an officer from the Royal Small Arms Factory at Enfield Lock has been loaned for the purpose. The inspection of all arms, both small arms and guns, should be carried out by inspectors not in any way connected with the manufacturers. In the event of any such supplies being made by private firms in the near future, the importance of this cannot be over-estimated.

129. The local manufacture of equipment in Canada is gradually increasing and it is hoped that in time the country will be self-sustaining in this respect.

130. A number of wheeled vehicles of a technical nature have been constructed by the Ottawa Car Company. The company has also carried out alterations and repairs to gun carriages and equipment. This class of work being new to the company, some defects have naturally shown themselves, but they have been rectified. A selected officer was sent to Woolwich to qualify in the inspection department at that arsenal. Testing appliances are under order, and there is every reason to expect that future manufactures will be satisfactory.

## TECHNICAL INSTRUCTION AT ARTILLERY SCHOOLS.

131. The need for an up to date institution at which instruction can be given in the higher branches of artillery, including the applied sciences connected with manufacture, has been much felt, especially in connection with the taking over of the modern



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heavy armament at Halifax. What is required is a scientific school of gunnery, representing both the Ordnance College and the School of Gunnery in England, including an experimental branch, at which both ordnance courses and gunnery staff courses can be given. The establishment of such a school is under consideration.

Proposals for the improvement of the technical instruction of both field and garrison artillery officers are also under consideration, in order to bring the standard of education up to a modern and higher plane.

### ARMOURIES AND BUILDINGS.

132. New armouries have been completed, or are in course of completion at the following places:—

Stratford.	St. Hyacinthe.
Chatham.	Woodstock, N.B.
St. Catharines.	Virden.
Cobourg.	Rossland.
Three Rivers.	

### QUEBEC DEFENCES.

133. Considerable progress has been made with the defence of the approaches to Quebec from the sea. Batteries for modern guns on the St. Lawrence, a short distance below Quebec, are well under way, and ought nearly to be completed during 1906.

### CAMP GROUND, LEVIS.

134. The water supply of the camp ground has been completed and an excellent supply of good water furnished. By some clearing and reclaiming leased land this property will, it is hoped, be made one of the best of the training grounds.

### MILITARY PROPERTIES.

135. The rent collected for military properties, under lease, for the year ending June 30, 1905, was as follows:—

District	Amount.
	\$      cts.
Military District No. 1. . .	71 00
Military District No. 2. . .	290 00
Military District No. 3. . .	375 18
Military District No. 4. . .	25 00
Military District No. 5. . .	220 25
Military District No. 7. . .	1,474 85
Military District No. 8. . .	71 25
Military District No. 9. . .	66 67
Military District No. 11. . .	60 00
Total	\$2,654 20



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136. The total receipts show a considerable falling off as compared with the preceding year, which was almost entirely due to a number of tenants having got into arrears. The arrears, however, were practically all paid by December 31.

137. The following military properties not being longer required for military purposes, were transferred to the Department of the Interior, to be sold, viz.:—

Station.	Property.	Remarks.
Montreal . . . . .	St. Helen's Island, containing 123 acres, 3 roods and 20 perches.	Sold for \$200,000 to the city of Montreal.
Quebec . . . . .	Piece of land facing St. John st., Quebec.	Sold to Compagnie d'Auditorium, for the sum of \$500.
Quebec . . . . .	Narrow strip of land lying between St. John st. and land sold to Auditorium Company.	Donated to city of Quebec, for purpose of widening St. John street.

The St. Helen's island property was sold under the following conditions:—

(a) To be used exclusively for park purposes.

(b) A small area at the summit, to be selected by the Master-General of the Ordnance, not to be built on, but reserved in the event of possible future military requirements.

(c) The department to be allowed to use the present store building and site thereof, with a right of way thereto, free of charge, until store buildings have been erected elsewhere.

The old drill hall, with site thereof, at London, Ont., consisting of one acre more or less, was sold to Edward Shea for \$13,250.

## LANDS ACQUIRED.

138. The following lands have been acquired for military purposes:—

*Petawawa.*—Large area of land, in the county of Renfrew, Ont., as a site for a central camp. It is bounded on the south by the south branch of the Petawawa river to its junction with the Ottawa; on the north by the boundary line between the 8th and 9th concessions of the townships of Wylie, and right bank of the Chalk river, &c.

*New Westminster.*—A site for a rifle range.

*Sydney, N.S.*—A site for a rifle range.

*Ottawa.*—Extension to Rockcliffe range—52½ acres purchased from Mr. C. H. Snow.

## THE DOMINION ARSENAL.

139. The work carried on at the Dominion Arsenal during the year was highly satisfactory. The output of S. A. A., with the factory working 50 hours per week, was over 9,000,000 rounds. Working at its utmost capacity, day and night, the output could be increased to 20,000,000.

The annual report of the superintendent is published herewith as Appendix IV.

## CLERICAL STAFF.

140. The civil staff of the department have performed their duties during the year most satisfactorily. While the clerical staff, military and civil, has increased during



the year, the increase has not kept pace with the increase in the volume of work in the department. This necessarily involved many clerks continuing their work long after the ordinary civil service hours. The cheerful manner in which they did this, a habit acquired during the South African War, and continued ever since, but not to so great an extent as during the past year, is most commendable, and deserving of approbation.

FINANCIAL.

141. The expenditure for 1904-5 totals well up to \$4,000,000, being the largest amount expended on the militia in any one year.

142. It is \$400,664 in excess of the expenditure for the previous year (1903-4), the increase being principally for the following services:—

Pay of permanent force.. . . .	\$145,189
Annual drill.. . . .	137,490
Construction and repairs, military properties.. . . .	47,408

143. The increase of \$145,189 in the appropriation for pay is due to the enlistment of some four or five hundred additional troops for the Halifax garrison towards the close of the financial year, and to the higher rate of pay authorized for the permanent force in November, 1904.

144. The increase of \$137,490 in annual drill expenditure is due largely to the efficiency pay, which was authorized late in 1903-4 for the non-commissioned officers and men of the active militia, and drawn by those only who trained in the June camps of that year, whereas in 1904-5 it was drawn by practically all who trained.

145. The following statement shows the numbers who drew efficiency pay in the two years, respectively, and the amount paid in each year :—

	1st year men.	2nd year men.	3rd year men.	Amount of efficiency pay.
1903-4.. . . .	5,107	1,220	2,534	\$ 33,436
1904-5.. . . .	12,413	5,415	9,486	113,432

146. The following statement shows the total numbers paid for annual training in the two years, respectively, also the total amount of pay and allowances drawn, including efficiency pay:—

	Officers.	N.-C. Officers.	Men.	Total all ranks.	Horses.	Total pay.
1903-4.. . . .	2,682	7,279	23,496	33,457	5,459	\$431,915
1904-5.. . . .	2,572	7,589	23,307	33,468	4,894	530,487

The total annual drill expenditure for the two years is summarized as follows:—

	Pay and allowances.	Transport.	Supplies.	Total expenditure.
1903-4.. . . .	\$431,915	\$77,635	\$52,675	\$562,225
1904-5.. . . .	531,594	93,813	74,317	699,724

147. The additional expenditure of \$47,408 in connection with construction and repairs, is due principally to \$30,000 expended on the Quebec walls in excess of previous year, and to \$12,000 expended on the Quebec drill hall for paving the floor and avenue.

148. The expenditure for other services, excluding payments on account of reserve stores, is about the same as for the preceding year, and needs no comment, with perhaps the exception of the large vote of \$1,300,000 chargeable to capital. The statement for the year which follows, shows the total expenditure under this vote separately, while the comparative statement for the ten years shows the total expenditure for each of the various services, respectively, whether chargeable to capital or income.



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149. The following services have benefited by the vote chargeable to capital for the year 1904-5:—

*Military properties—*

For rifle ranges and their construction.. . . .	\$ 80,161
Purchase of lands for military purposes.. . . .	10,243
	————— \$ 90,404

*Clothing—*

For reserve clothing.. . . .	\$272,658
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*Warlike and other stores—*

For reserve stores of saddlery, harness, blankets, tents, &c., &c.. . . .	\$328,696
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*Arms and ammunition—*

For ordnance, quick-firing guns, &c.. . . .	\$292,905
For rifles.. . . .	240,301
	————— \$533,206

*Dominion Arsenal—*

For reserve ammunition.. . . .	\$75,000
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150. It is highly desirable to have this vote continued for several years still, in order that the force may be equipped with a sufficient number of the latest pattern rifles and guns, &c., and that a sufficient reserve of clothing, stores, &c., may be built up in case the militia should be called upon suddenly to take the field. As the militia is maintained solely to be of service in such an event it must be apparent to every one that in order to have it effective it must be well armed and equipped and ready to take the field without delay.

151. Reserve stores of all kinds are necessary, as they cannot be procured at short notice in large quantities. Even if a portion of them were procurable in a time of emergency the cost would be much greater than if purchased beforehand in the regular way.

152. Following are the usual financial statements :—



FINANCIAL STATEMENT FOR THE YEAR ENDED JUNE 30, 1905.

VOTES FOR MILITIA SERVICES, 1904-1905.		EXPENDED.
		\$ cts.
By Statute—		
Pay of Chief of General Staff, Inspector-General, Adjutant-General, Quartermaster-General and Master-General of the Ordnance.....		14,698 78
By Vote—		
Pay of staff, permanent corps and active militia, including allowances.....		677,863 70
Military Survey Intelligence Branch.....		11,245 58
Annual Drill.....		699,724 43
Salaries and wages of Civil Employees.....		64,983 51
Military Properties, Works and Buildings ..		255,653 73
“ Stores.....		74,707 74
“ Clothing and Necessaries.....		179,943 12
Provisions, Supplies and Remounts .....		165,189 60
Transport and Freight.....		54,783 15
Grants in aid of Artillery and Rifle Associations and Bands and Military Institutes		49,100 50
Miscellaneous and Unforeseen Contingencies.....		34,980 99
Royal Military College of Canada.....		86,477 50
Dominion Arsenal.....		150,562 76
Defence, Esquimalt, B. C.....		109,986 67
Departmental Library .....		847 68
Monument—Battlefield, Fort Erie .....		3,000 00
“ Garrison Ground, Annapolis, N. S.....		5,000 00
Suitable Tablets on Rock at Citadel, Quebec.....		1,250 00
Gratuities.....		4,735 90
Special Service—South Africa, balance from 1903-4.....		397 61
Capital Account—Arms, Ammunition, Rifle Ranges, Lands, Reserve Clothing, Equipment, &c., including \$75,000 for manufacture of Reserve Ammunition at Dominion Arsenal.....		1,299,964 42
Sydney Mines Strike.....		5,309 09
Valleyfield Strike.....		121 70
Montreal Longshoremens Strike.....		534 20
Total.....		\$3,951,062 36
Less repaid on special service .....		1,219 53
		\$3,949,842 83
<i>Pensions.</i>		
Militia, Rebellion, 1885.....		\$16,419 64
“ Fenian Raid, &c.....		2,337 00
“ Upper Canada, Rebellion of 1837-38.....		280 00
“ Act, 1901.....		7,101 46
Total.....		\$26,138 10



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REVENUE.	\$ cts.	\$ cts.
Casual. . . . .		19,988 13
Ammunition, Stores and Clothing . . . . .	12,054 79	
Rents . . . . .	2,654 20	
Miscellaneous. . . . .	5,985 57	
		20,694 56
Royal Military College. . . . .		25,472 16
Total. . . . .		66,154 85



STATEMENT of Expenditure for the ten years ending June 30, 1905.

	1895-96	1896-97	1897-98	1898-99	1899-00	1900-01	1901-02	1902-03	1903-04	1904-05
Pay of headquarters and district staffs.										
Pay of permanent force including officers, N.C.O.'s and men attached, guards of honour and military survey.	39,927	41,353	38,592	39,525	41,769	41,093	41,203	67,296	69,541	83,816
Allowances for care of arms, drill instruction and postage to active militia.	216,650	256,176	251,103	225,715	197,655	248,639	270,028	281,474	407,874	563,200
Annual drill including supplies and transport.	63,525	63,280	77,876	74,556	99,603	70,882	51,716	51,696	82,268	56,791
Salaries and wages of civil employees.	100,637	130,168	299,628	422,553	424,991	454,357	529,625	385,190	562,236	699,724
Military property maintenance.	62,999	67,868	65,120	68,994	70,000	86,495	93,956	94,994	64,682	64,984
Construction.	31,450	39,101	33,447	34,819	39,930	39,203	47,760	49,201	50,511	49,854
rifle ranges and land.	71,533	73,491	66,453	86,114	118,704	191,858	220,785	110,173	162,682	205,799
Waikato and other stores.			14,659	62,758	96,949	76,104	74,961	64,165	110,326	90,404
Clothing and necessaries for permanent force and active militia.	30,994	50,127	46,868	79,084	58,087	85,171	99,079	89,319	673,075	536,511
Provision and supplies for permanent force.	55,184	232,167	87,344	169,978	185,079	209,657	224,805	142,364	401,958	424,983
Transport and freight, other than annual drill.	120,327	115,899	119,911	109,973	117,934	121,790	129,691	129,896	158,378	165,189
Grant to rifle association and band.	37,483	43,998	39,976	44,970	39,863	39,824	39,308	39,091	54,855	54,783
Royal Military College.	34,555	39,950	35,000	42,425	36,942	36,035	39,950	37,987	40,499	49,100
Domestic Army.	62,102	59,616	58,232	65,395	69,230	72,520	81,912	75,006	90,387	86,477
Arms and ammunition.	38,770	58,492	72,832	84,276	102,952	110,783	207,614	149,998	224,911	225,563
Gratuity and compensation.	1,000,000	745,965	173,740	393,688	161,498	131,551	224,736	299,689	197,101	427,718
Miscellaneous vote.	2,673	5,158	42,915	28,018	2,574	5,411	1,210	2,823	934	4,736
Defences of New Zealand.	16,012	45,123	119,318	423,124	202,138	48,016	70,122	168,748	59,433	53,543
Special services, South Africa.	121,892	45,119	44,899	44,670	12,989	128,140	122,432	111,943	109,987	109,987
Health, provisional Garrison.					1,427,502	558,811				
Totals.	2,136,713	2,413,651	1,688,213	2,500,635	3,624,654	3,106,241	2,828,887	2,515,309	3,551,911	3,953,162
Total of expenditure under last three headings, this being of an Imperial nature.	121,892	45,119	44,899	44,670	1,558,756	1,036,822	377,393	243,199	109,987	109,987



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PENSIONS.											
1812-15.....	60	1,520	1,180	1,520	840	800	600	360	320	280	
1837-38.....	1,760	2,894	2,871	2,583	2,339	2,339	2,261	2,268	2,373	2,337	
Penian Raid.....	2,892	18,864	18,918	18,712	18,571	18,103	18,317	18,188	17,916	16,420	
North-west Rebellion, 1885.....	19,202	.....	.....	.....	.....	.....	.....	.....	8,304	7,101	
Pensions Act, 1901.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Totals.....	23,914	23,278	23,269	22,815	21,750	21,242	21,178	20,816	28,913	26,138	
REVENUE RECEIVED.											
Militia.....	22,835	23,840	21,033	51,429	26,291	25,658	18,513	17,836	19,894	20,695	
Casual.....	1,103	128	401	961	2,120	37,777	1,821	483	595	19,988	
Royal Military College.....	19,882	16,523	15,884	21,536	21,464	22,036	23,230	23,956	23,323	25,472	
Totals.....	43,820	40,491	37,318	73,926	49,875	85,471	43,564	42,275	43,812	66,155	



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## REPORT OF THE INSPECTOR-GENERAL.

153. The duties assigned to the Inspector-General, by Order in Council, are as follows:—

The Inspector-General is responsible to the Militia Council for watching the course of training of the militia throughout the country, and for reporting to Council any deviation from the rules laid down by Council for the conduct of that training. For this purpose he will have authority to visit as frequently as he thinks advisable, all schools of instruction held by the permanent force, in order to watch the system of training thereat.

The report of the Inspector-General is published herewith as Appendix I.

F. W. BORDEN,  
*President.*

E. F. JARVIS,  
*Secretary.*



## APPENDIX I.

OTTAWA, January 2, 1906.

FROM THE INSPECTOR-GENERAL, CANADIAN FORCES,

To the Honourable

The Minister of Militia, in Militia Council.

SIR,—I have the honour to submit herewith my annual report upon the corps of the militia that were inspected either by officers of the headquarters staff acting for me; officers within the higher commands; officers of the 'Inspector-General's Branch'; or, by myself. the division of the duty, to some extent, being necessary in consequence of the fact that the office of the Inspector-General, being a new one, could not be perfected in all its details for several months after its creation, and from the further fact that the training of the militia, especially in the district camps, was carried out so closely upon identical dates that it was not possible for the officers of my branch and myself to make all inspections within the year, although our familiarity with the work, after the past year's experience, will facilitate our work and insure the accomplishment of more satisfactory results.

It will be seen by the 'abridged annual reports of corps,'\* attached herewith, that they contain merely the most useful and important information relating to each unit, in a condensed form, taken from more exhaustive reports, but containing, practically, sufficient information to allow of the merits of any corps being summarized and understood at a glance.

I regret to state, in connection with the above, that I have found it to be a most difficult task to complete these abridged reports from the meagre returns sent in by certain officers upon whom it is incumbent to promptly furnish complete and intelligent information.

## PERMANENT CORPS.

I commenced my inspections by visiting the units of the permanent force in February last, as they were the only corps then at work. I continued the inspections at opportune times throughout the year, and, while I found the condition of things generally, in regard to them, very satisfactory, I also found that the unsettled state some of them were in, in relation to the transfer of officers and men detailed to garrison Halifax, militated against the perfect state that they are at all times expected to maintain, and against the instructional work that can only be carried out to advantage when the instructional nuclei are free from the excitement caused by an abnormal state of things, as has naturally been the case with some of them since the occupation of Halifax, by the permanent corps, was decided upon.

I found that drill hall accommodation, for the permanent corps and the attached officers and men of the active militia, at Wolseley Barracks, London, was greatly needed, and, at St. John's, the drill hall at the barracks is a mere apology for such, and

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\* Not printed.



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quite inadequate, in fact is better suited as a gymnasium than for the training of a company of infantry, or those attached to a depôt. None can benefit by instruction given on a barrack square during severe winter weather, as I experienced, last year, both at London and St. John's, and if the instruction of the attached officers and men more particularly, is to be effective, the conditions surrounding their training must be reasonable, and made comfortable.

## ACTIVE MILITIA.

### CAVALRY.

This is a very popular branch of the service throughout Canada, and, as a rule, the personnel is admirable; the horses, also, are good in the rural districts, especially where the majority of the officers and men own the horses taken to camp, and where, generally speaking, all ranks are not only horsemen but horsemasters, the horses gaining very rapidly both in flesh and appearance after the first few days, more especially when stabled, instead of being exposed to the weather upon the horse lines, which latter was the case in the cavalry camp, at Laprairie, where the weather was wet and inclement, the horse lines deep in mud and water, and the horses suffered from the exposure.

Occasionally horses are accepted and passed by veterinary officers as 'fit' that could not stand one day's hard work under service conditions and be fit for a succeeding day's work, and, therefore, unserviceable from the first; another feature is that some men who own valuable horses will not risk them in a camp where they are well aware there is no stable accommodation; they, therefore, select comparatively worthless animals for the training.

A building set apart in each cavalry or field artillery camp for the treatment of sick horses would prove advantageous, as contagion might be checked, and the treatment of sick horses made easier and more effective than when carried out in the open in all sorts of weather, both by day and night.

There is quite as much zeal shown by all ranks as in any arm of the service, but it was noticeable, in some instances, that an unequal proportion of the instruction was left to the permanent corps instructors, regimental officers and non-commissioned officers merely watching the training.

This mounted force appears to be well equipped, but the rifles are awkward to carry without the support of either buckets or arm slings, evidently causing the men much inconvenience in their efforts to retain them and at the same time manage their comparatively raw and unbroken mounts.

The issue of the Portsmouth bit has proven a boon to mounted units. Steadiness has succeeded extreme restlessness, and both men and horses appear to have become changed beings, compared with what used to obtain when the bit and bridoon were in use.

### ARTILLERY.

The training of the artillery units, as shown in the following return, proceeded very much as in previous years, except in the case of the Royal Canadian Garrison Artillery, which was kept in an unsettled state for several months pending the transfer of a large proportion of its personnel to Halifax.



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## FIELD ARTILLERY.

The Field Artillery trained as follows:—

Military District.	Corps.	Place.	Date.
No. 1 . . . . .	1st Brigade, F.A . . . . . 11th Field Battery . . . . . 16th Field Battery . . . . . 6th Field Battery . . . . .	London . . . . .	June 19.
No. 2 . . . . .	2nd Brigade, F.A . . . . . 4th, 7th and 9th Field Batteries . . . . .	Niagara . . . . .	" 13.
No. 3 . . . . .	5th and 14th Field Batteries . . . . .	Barriefield . . . . .	" 27.
No. 4 . . . . .	2nd and 8th Field Batteries . . . . .	Rockliffe . . . . .	" 19.
No. 5 . . . . .	3rd Field Battery . . . . .	St. Helen's Island . . . . .	" 20.
No. 6 . . . . .	15th Field Battery . . . . .	Laprairie . . . . .	" 19.
No. 7 . . . . .	1st Field Battery . . . . .	Lévis . . . . .	" 19.
No. 8 . . . . .	10th and 12th Field Batteries . . . . .	Sussex . . . . .	" 27.
No. 9 . . . . .	17th Field Battery . . . . .	Aldershot . . . . .	Sept. 12.
No. 10 . . . . .	13th Field Battery . . . . .	Winnipeg . . . . .	July 4.

## GARRISON ARTILLERY.

The various garrison artillery units carried out their annual training as below:—

## 1st Regiment, C.A.—

- 1st Division, at Halifax, N.S.
- 2nd Division, at Halifax, N.S.
- 2nd Regiment, C.A., at Montreal, P.Q.
- 3rd Regiment, C.A., at St. John, N.B.
- 4th Regiment, C.A., at Charlottetown, P.E.I.
- 5th Regiment, C.A., at Esquimalt, B.C.
- 6th Regiment, C.A., at Quebec, P.Q.
- Cobourg Company, at Cobourg, Ont.

While the dates upon which the training of the field artillery batteries are shown above, as they went into camp for twelve successive days, it is difficult to state specifically upon what dates the garrison artillery units carried out their training. There can be no doubt, however, but that, so far as facilities were afforded, it was faithfully and well performed in every instance.

The practice of the field batteries, including that of the permanent units, was carried out at Petawawa, except in the case of the 3rd, 5th and 12th Field Batteries, owing to their inability to furnish the usual details at the time it was considered most convenient for them to do so, but for which no blame can be attached to anyone, as the ranges, only recently acquired, could not possibly have been prepared for practice until the season was very far advanced, too far, indeed, to allow of the completion of the whole artillery practice for the year.

The Royal Canadian Garrison Artillery having been obliged to leave Petawawa to proceed to Halifax, the 2nd, 3rd, 4th and 6th Garrison Regiments and the Cobourg Garrison Company were unable to put in their practice, but that of the 1st and 5th regiments was carried out, as usual, at Halifax and Esquimalt, respectively.

Preparatory to the practice, of course, was the ordinary training either at local headquarters or at a camp of exercise, which training, judging from the reports received from inspecting officers, and my own personal observation, was well attended to and effective, in some instances remarkably so, all ranks appearing to be active and zealous and having a particularly business-like look about them, more noticeable, perhaps, in corps supplied with ordnance and technical equipment of modern pattern practically up to date.



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As will be seen by the abridged reports upon the corps that did their firing, at Petawawa, that the results were by no means satisfactory. This may be accounted for partly because the preparation of each unit for the practice was not as perfect as it might have been, but also, and more likely, from the fact that the conditions of the practice were absolutely different to anything these corps had been accustomed to. Previous efforts in firing had been made on open ranges, where the targets were in full view, while, at Petawawa, a magnificent wilderness presented itself to the officer commanding the firing party, who, somewhere within the maze of wooded distances, had first to locate his objective and then determine the range.

The manoeuvring was not, as a rule, well done, but there again battery commanders found themselves in a novel position, yet just where they might expect to be if before an enemy, in a rough undulating country hedged in on every side by some of nature's impediments that had to be dealt with before the firing point could finally be selected, or the targets located.

The practice with the 5-inch howitzer of the 1st Brigade, Field Artillery, was made uninteresting and disappointing from the fact that they were not provided with shrapnel shell. It may do very well to fire at targets extensively surrounded by water with plugged shells, but when such projectiles are merely filled with water as a substitute for a bursting charge, and descend without exploding at some 3,600 yards from the firing-point, among dense scrub or shifty sand, the result is lost, the gun layer is at sea, and the detachment disappointed and discouraged.

Observing from a splinter trench the firing with the 12-prs. at 2,500 yards upon 'infantry' targets, the effect was most imposing and seemingly disastrous to the 'infantry,' but the official return of the results told a different story—the practice from the 12-prs. was not good.

While the above statements may not appear to be encouraging, yet, when all the difficulties that surrounded the training and practice, last autumn, at Petawawa, are duly and fairly considered, there can be no reason to conclude that any but the very best results will come from the experience all ranks gained at that camp, and, as the work expands and becomes more perfect, year by year, greater possibilities for improvement will offer, greater facilities for efficiency will arise, and all ranks will awaken to the importance of being able to manoeuvre and effectively use the guns they are provided with, as if upon active service, in the presence of an enemy.

It is quite natural that during the training and while returning to their headquarters, the guns, harness, equipment, &c., of a field battery will get more or less into a condition that will require months of hard work for one caretaker to again put right, the consequence is that everything deteriorates, the iron rusts, and the leather perishes for want of oil and dubbing, which might all be avoided were a few men employed by the department to give the whole outfit a rough cleaning up immediately the unit returned to its headquarters, the caretaker putting on the finishing touches, more leisurely.

The present artillery harness is large and out of proportion to the ordinary class of horses turned out with field batteries, and were some improvement in the matter of harness brought about, certain batteries might profitably march to the mobilization camp, which would give them a fair chance of testing their harness, besides affording an experience to all ranks in one of the most important of their many duties.

#### ENGINEERS.

This arm of the service is one very difficult to maintain in an efficient state. A very large number of the officers and non-commissioned officers are not technically qualified, the ordinary provision for instruction being inadequate, but this was partially set right at the practical school established, with a three months' course, and held at camp Lévis in September, last, where remarkably good work was done, and where, also, several officers qualified in practical military engineering.



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From what I saw, at Lévis, I concluded that the construction work, such as carried out there, might well be taken material advantage of, for instance, at Petawawa, during the coming season, at the same time giving it an educational value were a temporary school authorized for that station. The facilities for engineer work offered, at Petawawa, are unequalled.

The four engineer companies, established at long distances apart, cannot well be mobilized as one unit for training, but they might, individually, be made profitable use of, and to their own advantage, as well, were they sent into their respective district camps two days previous to the arrival of the troops, and were they, also, permitted to remain for a day or two after the departure of the troops. This being authorized, their services could be utilized in preparing the camp ground, completing the water supply, repairing latrines and small buildings, &c., and drawing and classifying their own stores; then, at the end of their training, and the breaking up of the camp, they might take down and store away certain structures, fill in pits, and return their own surplus stores to the ordnance branch, no light task, all told.

It is evident that on the principle accepted that it is practically impossible for city corps to give their time up to camp life even for the prescribed twelve days' training, so is it equally impossible to secure the attendance of the whole of any engineer company at a district camp for twelve days, as the personnel is drawn chiefly from the towns—much of which might be remedied or obviated were they recruited to a greater extent from rural districts.

As a rule the whole of the equipment requisitioned for by officers commanding engineer companies is seldom issued, which seriously handicaps officers commanding in their efforts to carry out the prescribed syllabus.

Where engineer units were included in the operations of tactical field days, it was felt that it would have been more in keeping with their recognized functions had they been given some duty entailing strictly professional technical knowledge, such as building a bridge, pontooning a stream, &c., and not have considered them as if they had been merely acting as infantry at a field-day. They might have gained some knowledge from the one, but little, or no professionally technical knowledge, certainly, from the other. Their scientific usefulness is gone when included among the purely fighting units.

## CORPS OF GUIDES.

The duties of this corps are varied, and while only organized two years ago, excellent and useful work is being done by them in matters of surveying and furnishing valuable information.

The training of the officers was carried out at several of the district camps during 1905, many of them having passed the prescribed examination held at the Niagara and Sussex camps.

As yet it has not been considered necessary to include non-commissioned officers, or men, beyond a certain number of batmen, within their ranks.

## INFANTRY.

The infantry, both city and rural corps, appear to be steadily gaining in efficiency, the 'm.s.' and 'v.b.' officers having almost all retired, and few, if any, of the officers appointed previous to 1904 have failed to qualify for the rank they hold.

In the city corps the non-commissioned officers appear to be remarkably capable, the section commanders taking part with zeal and intelligence in the drill, but, in the rural corps, the opposite is more in evidence, the section commanders merely remaining in rear of their sections, leaving the weight of the drilling, so to speak, in too many instances, to the permanent corps instructors, and where this was the case, I had the section commanders fall in with the rank and file to be taught, as they could not teach.



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The permanent corps instructors are invaluable, but there is a proper way in which to take advantage of their services. Without some defined rules in regard to them—some defined system for utilizing their services—much of their valuable time is wasted.

It is long and continuous service and attention to drill and duty that make the efficient non-commissioned officer and the reliable soldier, and there is a feeling of hope evident, at last, that with the better pay and liberal treatment of the rank and file, men will be induced to take a deeper interest and pride in their corps and in their work, and continue to serve as long as they are useful and physically fit, and thereby become helpful in the organization, discipline and training of their respective corps.

There is a marked improvement in the dress of the officers, that is to say their dress is more uniform and more recent pattern, and the Sam Brown, a belt which makes a very smart appearance, especially when worn with the blue serge trock, is much in vogue. The brown boots worn with brown leather gaiters add to the soldierly appearance, and have proved to be serviceable, and, in this combined dress, an officer is practically prepared for any duty, mounted or dismounted.

Mounted officers, in some instances, have failed to procure regulation or even proper mufti saddlery, and often, where such is the case, the so-called 'charger' is much in keeping with the saddlery.

There is a disposition to leave off the sword, unless at ceremonial parades, which adds to the fact, no doubt, that the majority of officers are in no way expert in its use. Their experience in the use of the revolver is equally limited.

The arms and equipment are serviceable, the .303 rifle rapidly taking the place of the Snider-Enfield, which may seriously lessen the number of rifle shots throughout the Dominion, as there will be fewer rifle ranges available to meet the long distance requirements of the more effective arm, and, consequently, the short 'local' ranges, at one time numerous, will necessarily be abandoned, and the rifle practices and small matches must follow suit.

The clothing issued to the men is apparently good and well fitted, and the lack of serviceable boots not so much in evidence as at former camps, arising probably from the fact that the selected men now joining the force can better afford a better boot, the men of the city corps keeping up their foot gear, as formerly, which all greatly adds to the usefulness and efficiency of the soldier who must march on foot.

What head dress shall, or should be worn is still a moot question, and while city corps appear in some degree to be satisfied with present arrangements, the majority of those who attend the training in camps appear to favour some pattern of light hat that can be made to look smart with a slight ornament in addition to the puggaree already authorized.

#### RIFLES (CORPS).

The above remarks relative to infantry apply equally to rifle regiments, but I may add that the brown belts worn with rifle uniform detract from the smart appearance of riflemen, more especially in the case of officers; but there are rifle corps in which the officers wear black belts with silver mountings, while the men wear the brown belts, and, when in addition to this, one finds a few officers or men in khaki, the appearance of such corps can be better imagined than described.

#### ARMY SERVICE CORPS.

The several companies of the Army Service Corps successfully maintained, throughout the training of the troops in camp, during 1905, the high standard of efficiency and usefulness they were credited with on account of their services during 1904.

The bread turned out by them at several of the camps was exceptionally good, but, in one or two instances, the first day's baking was somewhat spoiled through the ovens not having been set up in time to thoroughly test them before the arrival of the troops.



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From what I can learn it would be in the interest of the service, and give greater satisfaction, were the slaughtering, in addition to the baking, carried out by the Army Service Corps, instead of by the local butchers.

## ORDNANCE STORES CORPS.

While I have had no opportunity of inspecting this branch of the service as a corps, in the general acceptance of the term, yet I have inspected several of the subdivisions that go to complete the Ordnance Stores Corps. I found that not only were all ranks of this branch carrying on their prescribed and varied duties zealously and faithfully in quarters, but that they were proving themselves to be invaluable factors in facilitating the work required of them in connection with the issue of equipment and stores to the several camps of instruction, the accomplishment of which means so much to the comfort and efficiency of the force. There was never a time in the history of the militia when the camp equipment, taken all round, was so complete, serviceable, and promptly dealt with as at present.

At the suggestion of the Quartermaster-General, I visited several of the branch stations, where I found that the work of the subdivisions, above referred to, was very much handicapped for want of sufficient help. In fact, I found valuable stores deteriorating because the personnel employed at the stations, from no fault on their part, so far as I could learn, were unable to cope with the pressure of work entailed upon them.

In certain of the camps, the examination of arms (rifles) by armourers somewhat, unfortunately, interfered with the prescribed syllabus of corps undergoing training. Armourers' shops may have been provided in the different camps, wherein damaged arms may have been repaired, but it appeared to be more desirable to have rifles that were out of repair attended to before being taken to camp, and save interfering with the training, for which there is but a very limited time available.

## CAMPS OF INSTRUCTION.

In several of the camps in which corps were inspected by me I found the work being earnestly and well done, but in those camps where the officer commanding the higher command (acting as a district officer commanding, or camp commandant) and his staff were in charge, instead of a district officer commanding, or a commandant especially selected, and his staff, I found that proper attention was not given to the troops, at drill, because the officer commanding the higher command and his staff had either to neglect their ordinary office work connected with headquarters and the higher command, the latter involving, possibly, three districts, or be absent from or neglect the training of the troops—very naturally the troops were the losers, the fact being apparent that the door was rather, on occasions, left open to certain irregularities and short comings, for instance, and not infrequently, senior officers were late in their attendance on parade, were actually absent, in fact, and that while other officers, temporarily taking their places, might carry out, in a fashion, the syllabus of training prescribed, there appeared to be a lack of uniformity, no two regiments, &c., proceeding with the same detail of drill at the same time; no period of rest observed, and insisted upon, without all of which the best results cannot accrue.

The absence of regimental majors, also, reported as attending lectures in the camp lines, appeared to be not a little felt, detrimentally; and the custom, or habit, of 'mounted' infantry officers appearing on the forenoon and afternoon parades, without their horses, produced a bad effect, and greatly handicapped them in the supervision of their respective commands, or half battalions.



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## CAMPING GROUNDS.

This is a subject hardly within my province to refer to, as Inspector-General, but at the same time the question cannot be but of the greatest interest and importance in relation to the mobilization of troops for training, and as, for many years, I have had a full knowledge of the possibilities of the different camping sites of all the older provinces, I submit the following remarks in relation thereto, and, in addition, I have taken the liberty of including the central camp, Petawawa.

## MILITARY DISTRICT NO. 1., LONDON, ONT.

Comparatively small, but well situated, easily drained, and remarkably dry, consequent upon the porous nature of the soil, and found adequate when one-half the force of the district, only, is trained at one time, as has been the custom for years past. A rifle range has been provided in the vicinity. Exceptional opportunity for miniature target practice is also afforded.

## MILITARY DISTRICT NO. 2., NIAGARA, ONT.

Inadequate for the very large force trained at one time; but, were the training carried out, as at London, that is to say divided, this ground might be found suitable. The situation is somewhat awkward to reach on account of the transport of troops, stores, &c., having to be made to a flank of the district. On the other hand, strategically it is of the greatest importance; there are very old historical associations connected with it, and it is a popular place of rendezvous. There is a rifle range available, and a sufficient water supply at hand.

## MILITARY DISTRICT NO. 3., BARRIEFIELD, ONT.

With a small expenditure for improvement by draining, and by collecting the too numerous loose stones, Barriefield Common might be made a desirable camping ground, one objection to it, however, being that it lies upon a flank of the district, another that there is no rifle range available within reasonable distance. The latter difficulty has, to a certain extent, been overcome by practising the force with gallery ammunition. Good water supply available.

## MILITARY DISTRICT NO. 4., OTTAWA, ONT.

A most satisfactory move was accomplished when the force of this district was brought to Rockliffe Park for their annual training, but the present ground is too limited. There are other sites, however, in the neighbourhood of Rockliffe, close to the city of Ottawa, available, convenient to the present Rockliffe rifle range, and to an excellent water supply.

## MILITARY DISTRICTS NOS. 5 AND 6, LAPRAIRIE.

The camping ground is within an hour's distance from Montreal by steamer, and lies close to two systems of railway that form a junction at Brosseau's station. It is, probably, the oldest of all Canadian camping sites, and has been successfully camped



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upon time and time again, but, unhappily, the most desirable portion of the original ground has been fenced off from the troops, and the less desirable part only left for military purposes. But, even this portion, with a very small expenditure of money, might be so improved by drainage that, in ordinary summer weather, it would be not only adequate in extent, but dry and suitable. There is an opportunity, also, for temporarily establishing a safe rifle range, and water can be had, for the horses of mounted troops, at the River St. Lawrence, and, for the troops, from the town of Laprairie, one mile distant.

## THREE RIVERS.

Three Rivers. —An ideal site and very complete, immediately outside the limits of the city of Three Rivers, with a first-class rifle range and good water. Were the land lying between the present camp and the St. Maurice river secured by the department there would be ample room for the 3rd Brigade of cavalry in addition to the usual complement of troops, which would obviate the necessity for this cavalry brigade being sent to Laprairie. Of course, Sherbrooke, the *chef-lieu* of many of the surrounding counties from which the 3rd Cavalry Brigade is recruited, is really the proper centre for their mobilization, would be more popular with all ranks and would prove a saving in transport.

## MILITARY DISTRICT NO. 7., POINTE LÉVIS.

This is a commodious and convenient location for a camp for the troops surrounding the Quebec military station, but parts of the ground should be levelled and thereby add to the present parade ground. There is an excellent water system in operation, and a suitable rifle range.

## MILITARY DISTRICT NO. 8, SUSSEX.

A perfect camping ground and plenty of water. A suitable rifle range has been provided since the last annual training.

## MILITARY DISTRICT NO. 9, ALDERSHOT.

An ideal camp site in every particular, in fact one of the best in Canada, and being rapidly improved by a systematic removal of the scrub, and improvement of the cleared land. An admirable rifle range lies within the precincts of the training grounds.

## MILITARY DISTRICT NO. 12, CHARLOTTETOWN.

The troops of this station generally camp in the vicinity of Charlottetown, where there is an ample supply of water and a good rifle range is being provided.

## CAMP SITES, GENERALLY.

From the above it is quite apparent that there are a few camp sites extremely limited in area for the purposes for which they are used, but so long as a rifle range and a good supply of water are available, and they are conveniently located for the mobilization of the troops concerned, the inconvenience of a limited area might be tolerated where the syllabus of training is of an elementary character, more particularly in view of the fact that the extensive territory, at Petawawa, is suitable and available for the more extensive manoeuvres, tactics, or gun practice.



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## THE CENTRAL CAMP.

Camp Petawawa is situated ten miles to the west of Pembroke, on the south bank of the Ottawa river, intersected from east to west by the Canadian Pacific Railway, both river and railway affording transport facilities sufficient for military purposes, and, in addition to this, the road to Pembroke is a good one, and the roads leading in many directions throughout the domain are all that can be required to facilitate camping, or manoeuvring.

As this territory, consisting of several thousand acres, had only been secured by the department for a camp site and artillery range at a late date in 1905, it was found practically impossible to prepare it sufficiently and in time for the full completion of the military training and work required to be carried out for last year, the following being some of the most pressing requirements, namely:—

A landing wharf on the Ottawa, at Petawawa; a railway platform on the Canadian Pacific Railway within the camp lines; horse shelters in artillery lines; store buildings and water supply. Again, the several artillery ranges had to be located, measured, and targets, shelter trenches, &c., built, before any gun practice could be proceeded with, to say nothing of having to induce the local settlers to move out, the above, after all, only representing one-half of what had to be accomplished, in the matter of details, before this important encampment and the several ranges thereon could be made sufficient and safe.

In face of all the difficulties that had to be met and overcome and the loss of time involved, before gun practice could be gone on with, a great deal of good work was accomplished.

The advantages to be gained by the artillery personnel who may be trained in manoeuvre and in the practice of their arm of the service, at Petawawa, cannot be over estimated, as heretofore it might truly be said of them that they had been 'cribbed, cabined and confined' to the barrack square or the parade ground, and to flat and open ranges, while, at Petawawa, an artillery commander will find a *terrain* extending far beyond his natural vision, extensively covered with timber, dotted with lakes and recently occupied farms, and intersected with rivers and rolling ground, a panorama presenting a scene seldom to be met with, even in picturesque Canada, and certainly not to be surpassed as a military training ground the world over.

## FORTIFICATIONS.

## THE CITADEL, QUEBEC.

I inspected the fortifications, at Quebec, and No. 1 Fort, at Point Lévis, on September 13 and 14, last. The Citadel walls were being repaired, but the revetment walls, supporting the glacis, appeared to be crumbling away, and falling into the ditches in many places. If it is the intention of the department to demolish the glacis, it would be less unsightly to have the walls torn down and the ditches filled in, partially even, and not leave the masonry to fall in of its own accord, as it is now doing.

The parade ground within the Citadel is in a very rough state and hardly fit to drill upon. A small expenditure of money for levelling and smoothing the surface by the lessee would make it reasonably good.

The neglect by the lessee, of that historical, time-honoured parade ground, the Esplanade, that no doubt in years long gone by was the Champ de Mars of the brave French, and upon which probably every British regiment has at some time, within the last one hundred and fifty years, paraded, or may again be paraded, is a decided reflection upon those responsible for its keep.

Inequalities of ground, cow-paths and weeds being its prominent features, symbols of degeneracy, and the loss of national pride.

The forts, at Pointe Lévis, appear to keep in fairly good repair. At the same time, periodical painting of woodwork and pointing of the masonry would prove beneficial.



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## HALIFAX.

Through the kindness of the General Officer Commanding His Majesty's Forces, I had the privilege of visiting the whole of the fortifications not then taken over by the Canadian authorities, at Halifax. Repairs were being made at McNab's island, and extensive work was being proceeded with at Sandwich, and, generally speaking, the whole system for the defence of Halifax was in the best possible condition.

## MEDICAL SERVICES.

While these services were admirably carried out in 1904, there was an improvement noticeable at my inspection, last year. It was gratifying also to find that several recommendations I had made in my report upon the militia, for 1904, had been recognized, and to a considerable extent, authorized in every instance, which has greatly added to the efficiency of the medical corps and the comfort of the patients being treated by them in the several camps.

The new tent issued to this branch of the service has proved a model in every way, particularly with regard to the ventilation that appears to be perfect, but, unfortunately, so far the issue is quite inadequate for the full requirements of this most important service.

## MUSKETRY.

There does not appear to be any strictly defined musketry system observed or provided for.

At certain stations and camps of instruction excellent rifle ranges are to be found; at others there are ranges suitable for miniature practice, only; again, at others there are no ranges of any description provided, this latter being sometimes hard to understand, for instance, at Laprairie, in June, last, the 3rd Cavalry Brigade were out for the usual twelve days' training and, so far as I can learn, had no musketry training of any kind.

Another phase of the want of system that should be noted and rectified, if a correct return or report on the comparative musketry efficiency of the force is desired, is to be found in the fact that there do not appear to be any rules laid down by which the actual average shooting proficiency of all units, armed with the rifle, can be arrived at, no matter whether their respective practices have been carried out with service or with miniature ammunition, and that there is no extra compensation to those who are the most proficient in the use of the rifle at target practice.

The firing should in each case, of course, be classified.

While it must be evident to all concerned that the rank and file are keen for rifle practice, there are those of other and higher ranks inclined to minimise its importance, and happiest when there is little or none of it.

I cannot do better than call attention to my report of November 30, 1904, as the Officer Commanding the Militia, in relation to this important subject, unless, perhaps, we turn back to the General Orders of 1870, thirty-six years ago, where it may be seen that liberal pecuniary rewards were granted those members of the militia force who became proficient in the use of the rifle under a prescribed musketry system.

## SCHOOL OF MUSKETRY.

This very important institution, which may appropriately be designated the 'Hythe' of Canada, still keeps up its high reputation for useful work in qualifying officers and men of the militia force, and in granting them well-earned certificates,



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but that work is not being taken full advantage of throughout the country, as might be done were the services of its graduates systematically enlisted in assisting the units to which they belong in gaining the knowledge of the theory, and the practice of musketry.

### SIGNALLING.

While, practically, in name only a 'corps,' the work accomplished by those engaged at signalling, in the several camps, was most satisfactory, the zeal shown by all ranks under training in signalling being evident.

It is expected that the system will have become more perfected before this year's annual training takes place, and that then every unit of the active militia will be given a chance of securing its quota of qualified signallers.

### GENERAL OBSERVATIONS.

The replacing of the General Officer Commanding by a Militia Council that may administer militia affairs, but have no power to command—the executive command being vested in officers of the higher commands—has rendered necessary an independent inspection department, of which the Inspector-General is the head, but, as in the case of the Militia Council, neither the Inspector-General nor the officers of his department or branch have, as inspectors, any executive command.

The duties of the Inspector-General have been clearly defined by a general order, and he is responsible and subject to the Honourable the Minister in Militia Council. 'His sole function is to report upon actual facts without expressing opinions upon policy.'

I find, therefore, to be more explicit, that my duties as Inspector-General are limited to forming a judgment, either personally or through the staff allotted to me, upon the efficiency of the officers and men, on the handling of troops, on the standard and system of training, on the suitability of the equipment, and, practically, as I take it, on all that affects the readiness of the forces for war; and, furthermore, to report thereon. I have, therefore, endeavoured to convey to you, sir, and the Militia Council as concisely as possible in the foregoing pages, my impressions and conclusions, arrived at after my first year's experience as Inspector-General.

This report might better, perhaps, have taken a different form, but I thought it well, for this year, to adhere to the custom long in vogue, and have my remarks follow in the order of precedence of corps, and, with regard to general subjects, in the order of their importance.

It is accepted as a military axiom that perfect organization, thorough discipline and accurate gun and rifle practice are the chief essentials necessary for the sound establishment and insurance of a reliable military force. It, therefore, does not require to be pointed out how especially necessary it is that the limited Canadian force, extending over an exceptionally extensive area, should be perfect and complete in these particulars.

With regard to the discipline of the force, reliance must be placed more upon the training the personnel receive at their homes, and at the public schools they attend, than upon the annual twelve days' military training they receive. It can, however, be truthfully affirmed that Canadian troops serving on Canadian soil have ever been amenable to discipline, sometimes of a severe order.

My remarks upon gun and rifle practice cannot be further extended more than to add that I learn that greater efforts will be put forward, this year, to improve this important branch of training.



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The substitution of a Militia Council for a General Officer Commanding has happily brought about a greatly to be desired attempt at decentralization, but, so far as I can learn, the *departure* remains more a theory than a reality, the outside force being, as in the past, to too great an extent dry-nursed from headquarters, and instead of officers commanding the higher commands, officers commanding districts, or those commanding units of the permanent corps being obliged to rely absolutely upon themselves and upon their own judgment in matters of importance, they are inclined, partly from force of habit, to rely upon the staff at headquarters, who are already burdened with all their official shoulders can reasonably be expected to bear.

I have the honour to be, Sir, your obedient servant,

AYLMER, Brigadier-General.

*Inspector-General.*



APPENDIX II.

From the Director-General of Medical Services,  
Ottawa.

To the Adjutant-General,  
Canadian Militia.

HEADQUARTERS,  
OTTAWA, December 15, 1905.

SIR,—I have the honour to report on the medical services for the year ending December 31, 1905, as follows:—

MEDICAL INSPECTIONS.

Owing to the impossibility of my personally inspecting all camps, the technical inspections of units of the Army Medical Corps and Regimental Medical Services were performed by the principal medical officers of command staffs as follows:—

*Western Ontario Command.*—Lieut.-colonel W. Nattress, P.A.M.C., London divisional camps.

*Quebec Command.*—Lieut.-colonel A. N. Worthington, A.M.C., Laprairie and Three Rivers camps.

*Maritime Provinces Command.*—Lieut.-colonel G. C. Jones, P.A.M.C., Sussex, Aldershot and Charlottetown divisional camps, Fredericton station hospital.

I personally inspected, on the dates shown, the undermentioned camps and station hospitals:—

London camp.. . . . .	June 16
Niagara “ . . . . .	“ 19
Ottawa “ . . . . .	“ 21
Lévis “ . . . . .	“ 23
Kingston “ . . . . .	“ 30
Toronto station hospital.. . . .	“ 15
London “ “ . . . . .	“ 16
Quebec “ “ . . . . .	“ 26
St. Jean “ “ . . . . .	“ 28
Kingston and Royal Military College station hospital.	July 1

Reports on the deficiencies of the different units of the Army Medical Corps and the regimental bearer section have been forwarded, by the above named officers, to the Inspector-General, and the sanitary and general reports to the Director-General of Medical Services, in accordance with instructions. The following comments on these reports are submitted.

LATRINES.

The dry-earth system was again used last year, but my recommendation of the septic-tank system has been adopted for the proposed central camp at Petawawa. I have no doubt but that it will prove very satisfactory.



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I would, however, strongly recommend that the pan system of latrines proposed by the Director of Engineer Services be tried next year, and that wooden buildings having at the top ample ventilation, be used at all other than permanent camps.

I would also recommend that the chloride of lime, used as a disinfectant mixed with dry sand, be supplied at a maximum quantity of 800 pounds for each camp.

## REFUSE PITS.

The trench system proposed in my last year's report was tried at two of the most important camps, Niagara and Lévis, with the most satisfactory results. These two camps were certainly models of good and perfect sanitary camps. I strongly recommend that instructions be given to the Army Service Corps, to issue at camp, wooden boxes 2 x 2 feet in order to permit of the establishment of such kitchen trench pits. The expense would be largely compensated for by the improved general appearance of the camp, the perfect sanitation and the exemption from flies plague.

## UNITS OF THE ARMY MEDICAL CORPS.

In order to place the units of the Army Medical Corps on an equal footing with the Royal Army Medical Corps, I propose submitting, in the near future, a re-organization of the units of the Canadian Army Medical Corps. The present system of division of field hospitals and bearer companies does not meet with the requirements of the militia. Units have to be divided into sections in order to provide for a temporary field hospital for each camp. This is detrimental to the service in general. It is my intention to recommend the organization of eighteen field ambulance units in place of the eighteen bearer companies and field hospitals already existing. When these ambulance units are completed and provided with hospital section, bearer section and transport section, the department will be enabled to detail any one of them for service as required. As this system will be only a reorganization of the present one, the equipment will be practically the same. All units of the Army Medical Corps have had, during the year, twelve days' training in camp. This was most beneficial, and I have no hesitation in stating that the work done, the standard of men enlisted, the equipment and the hospital management, have been most satisfactory, and reflect credit on the corps.

## EQUIPMENT.

A complete set of new tents, disinfecting tanks, refrigerators, acetylene apparatus and stretcher baths were issued to the Army Medical Corps units during the year.

The ventilation of the tents was a great improvement compared with past models. The Army Medical Corps bell tent is provided with three large ventilators at the top and one above the door, which provide for perfect ventilation above the occupant's head, and cause more than three degrees difference in temperature from the ordinary bell tent. I would, therefore, strongly recommend the adoption of such ventilators for the ordinary bell tent made for the militia.

## REGIMENTAL MEDICAL SERVICES.

The recommendations contained in my last year's report have been all carried out. As the schedule of equipment for the medical service has been approved, the formation of a bearer section for each rural regiment should now be authorized. Two men per



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company would be detailed to act as stretcher bearers during the camp, under the orders of the regimental medical officers, and stretchers (4 for regiments of 8 companies; 2 for regiments of 4 companies) would be issued during the camp from local stores. The principal medical officers would requisition for them before camp, so that provision for them might be made by the ordnance stores. The formation of such a stretcher section would be most beneficial to the militia, and would complete the organization of each regiment.

### CAMP SITES.

The principal medical officer for the Quebec command reported that the camp site at Laprairie is very defective. The ground is low and the clay composition of the soil does not afford any possible means of absorption. Consequently the latrines, kitchen pits, and, during rainy weather, the camp ground itself, become very muddy, wet and unhealthy. It would be advisable to choose another camp site, or to hold the camp at Three Rivers, where the camp ground is perfect.

The Kingston camp grounds were also badly chosen. The rocky formation of the ground, covered with clay and very little sand, prevents the absorption of liquid, and causes overflow of latrines, kitchen pits, &c. The tents should be pitched on the lower plateau, or farther up on the hill, where good absorbing ground is available.

### PERMANENT ARMY MEDICAL CORPS.

The different detachments of the Permanent Army Medical Corps have been completed, with great benefit to the service. I strongly recommend that the station hospital repairs, so urgently needed at Kingston and Toronto, be made at an early date, if the new barracks and hospitals are not to be constructed in the near future.

### GENERAL HEALTH OF TROOPS.

The following returns show:—

- (a) The number of patients treated in station hospitals at permanent stations.
- (b) The number of patients treated in field hospitals during the camps.

This report shows that the health of the troops in camp and at permanent stations has been very good. The great precaution taken to avoid the spreading of contagious diseases has prevented any epidemic.

Two cases of smallpox occurred, one in London, the other at Rockliffe camp. Both cases were isolated and the patients transferred to the city isolation hospitals. The tents, clothing and equipment were disinfected on the grounds, with the disinfecting tank supplied to field hospitals instead of being destroyed as was done on previous occasions.



## SESSIONAL PAPER No. 35

## STATISTICAL RECORD.

Abstract from Admission and Discharge Book. Cases treated in Station Hospitals from January 1, 1905, to November 30, 1905.

Disease.	R.M.C.	R.C.M.R.	R.C.H.A.	R.C.G.A.	No. 1 Depôt.	No. 2 Depôt.	No. 3 Depôt.	No. 4 Depôt.
Abscess . . . . .	1	2	8	10	1	5	3	1
Abrasions . . . . .							3	
Adenitis . . . . .				9				
Ague . . . . .			1	1				
Alcoholism . . . . .			1	7	4	2		1
Albuminuria . . . . .				1				
Aneurysma of aorta . . . . .		1						
Appendicitis . . . . .				1			1	1
Biliousness . . . . .	1	3				10	8	
Blood-poison . . . . .		2		2		3		
Boils . . . . .	12	16	4		2	9	3	2
Bronchitis . . . . .	7		3	3	2		4	1
Bubo . . . . .			1	1				
Bursitis . . . . .						7		
Catarrh . . . . .			1	38				
Cerebral concussion . . . . .				1				
Chancre . . . . .		2		6				
Chancroid . . . . .				5				
Colic . . . . .	2	5	2	8	1			1
Colds . . . . .		11			16	7	8	11
Contusions . . . . .		20	11	17			4	
Conjunctivitis . . . . .		2	3	1	1			3
Concussion of brain . . . . .		1					1	
Constipation . . . . .			6	4				2
Cocaine poison . . . . .		1						
Colitis . . . . .				1				
Coryza . . . . .							2	
Chicken-pox . . . . .								1
Diarrhœa . . . . .	4	1	6	20	14	1		2
Diphtheria . . . . .	1				2			
Discoloration . . . . .		1	1					
Dyspepsia . . . . .			1	6		2	3	
Dysentery . . . . .			2	1				
Ear-ache . . . . .						1		1
Eczema . . . . .		4	1	2		4		
Enlarged glands . . . . .	1		1					
Erythema . . . . .	1							
Empyemia . . . . .		1						
Epilepsy . . . . .				4			2	
Epididymitis . . . . .							1	
Erysipelas . . . . .			1	2				
Excoriation . . . . .	1	9						
Exhaustion . . . . .						1		
Fever, scarlet . . . . .		1						
"    typhoid . . . . .	1		1	3	1		1	2
"    simple . . . . .				4	1	13		
Fistula . . . . .				1			1	
Fractures . . . . .		4		1		3	2	1
Frost bites . . . . .		4						
Gastritis . . . . .			2	9			6	5
Gingivitis . . . . .				3				
Gonorrhœa . . . . .		3	14	73	4	21	3	3
Gleet . . . . .			1		1			
Gum boil . . . . .				1				
Gun-shot wound . . . . .				1				
Gout . . . . .							1	
Hæmorrhoids . . . . .			1	2	3		3	
Hæmorrhagia . . . . .				2			1	
Heart disease . . . . .		1						
Heart failure . . . . .						1	1	
Hernia . . . . .				1	2		1	
Herpes . . . . .			1	11			1	
Hepatitis . . . . .				2				
Influenza . . . . .	40	14	19	55		73		16
Indigestion . . . . .	5			6	4			



STATISTICAL RECORD.

Abstract from Admission and Discharge Book. Cases treated in Station Hospitals from January 1, 1905, to November 30, 1905—*Con.*

Disease.	R.M.C.	R.C.M.R.	R.C.H.A.	R.C.G.A.	No. 1 Depôt.	No. 2 Depôt.	No. 3 Depôt.	No. 4 Depôt.
Insanity.			3	2				
Insolation.				2				
Iridocyclitis.							1	
Infected heel.							1	
Iritis.								3
Jaundice.						1		
Lumbago.		1	2	6		2	1	1
Measles.	15		3					16
Mumps.	6							
Morphinism.		1						
Myalgia.				2			1	
Melancholia.					1			
Meningitis.							1	
Neuralgia.		1	3	3		8	1	1
Neurasthenia.			3					
Neurosis.							3	
Orchitis.		1	3	4		1		1
Ostitis.			2					
Ophthalmia.						12		
Otitis.							1	
Ptomaine poison.	1							
Pneumonia.		1	1	1				
Pharyngitis.		7		1		12	1	
Pedicular.			1					
Pleurodynia.				2	1		1	
Phthisis.				1				
Phlegmon.				1				
Quinsey.		2			1			3
Rheumatism.	1	1	16	12	1	11	3	4
Ranula.		1						
Ringworm.						1		
Ruptured muscles.		1						
Synovitis.	4	1	5	1		4		
Sciatica.	1			1		1		
Scabies.		5		2	1	1	2	
Sore throat.					31			26
Sore feet.			5	7	10			1
Sprains.		11	11	17	4	18	6	
Stomatitis.			1					
Stricture.				1		1		
Syphilis.			3	9	1	3		
Shock.						1		
Tonsillitis.	19		13	16	2	30	10	
Ulcers.			5	4		2	1	
Urticaria.				1		2		
Vaccination.		1	2		1			
Whitlow.		1						
Wounds.	22	17	18	7	2	24	3	13
Totals.	146	162	193	129	115	301	101	123
Operations.	6	1	2	27		2	2	1
Died.		2		2		1	2	
Discharged by medical board.		1	1			2	5	
Remaining in hospital.		8	7	21	3	5	4	
Grand totals.	152	174	203	479	118	311	114	124



Abstract from Admission and Discharge Book. Cases treated in Field Hospitals at Divisional Camps, 1905.



STATISTICAL RECORD.

Abstract from Admission and Discharge Book. Cases treated in Field Hospitals at Divisional Camps, 1905—*Con.*

Diseases.	No. 1 Div. Camp.	No. 2 Div. Camp.	No. 3 Div. Camp.	No. 4 Div. Camp.	No. 5 Div. Camp.	No. 6 Div. Camp.	No. 7 Div. Camp.	No. 8 Div. Camp.	No. 9 Div. Camp.	No. 12 Div. Camp.	R.C.A.
Pediculus . . . . .		3									
Phlegmasis of cheek. . . . .							1				
Phlegmasis of finger. . . . .							3				
Phlegmasis of feet . . . . .							2				
Pleurisy . . . . .								1			
Pleurodynis . . . . .	1						1				
Renal colic . . . . .		1									
Rheumatism . . . . .	3	2	1	1		1	7	2	1		1
Ring-worm . . . . .			1								
Scabies . . . . .		1									
Scalds . . . . .		1									
Smallpox . . . . .	1										
Sore feet . . . . .					3						
Syncope . . . . .				1			2				
Synovitis . . . . .			1		1	1					1
Sprains . . . . .	4			2	2	1		4	1		2
Sunstroke . . . . .	1	1									
Stomatitis . . . . .											1
Tonsilitis . . . . .	5	10	2			2	5	4			2
Tuberculosis . . . . .									1		
Typhoid pneumonia. . . . .											1
Varicose ulcer . . . . .				1							
Whitlow . . . . .				1							
Wounds . . . . .	3	17	13	6		3	11	5	1	4	7
Wounds, gun-shot. . . . .			1	2							
Transferred to civil hospitals . . . . .	6	8	2	6		1	1				2
Deaths . . . . .				1	1	1	1				2
Total cases . . . . .	66	129	50	39	24	60	115	66	28	14	41

DENTAL CASES.

Abscess . . . . .		7		3			3				
Aptha . . . . .				1							
Caries, dental . . . . .							2				
Extractions . . . . .		12		9				12			
Fillings . . . . .		8		6							
Infl. nerves . . . . .				10			2				
Odontalgia. . . . .							18	2			
Pericementitis . . . . .		3									
Periostitis . . . . .		5		4							
Pulpitis . . . . .		11									
Pulps destroyed . . . . .				2							
Total cases . . . . .		46		35			25	14			
Grand totals . . . . .	66	175	50	74	24	60	140	80	27	14	42

I have the honour to be, sir,

Your obedient servant,

EUG. Fiset, Colonel,  
Director-General of Medical Service.



## APPENDIX III.

KINGSTON, January 1, 1906.

To the President  
Of the Royal Military College, Canada.

SIR,—I have the honour to forward my report on the Royal Military College for the year ending December 31, 1905.

## STRENGTH.

At the beginning of the year there were 96 gentlemen cadets. During the year this number was altered as follows:—

Commissioned in Imperial forces.. . . .	3
Commissioned in the permanent forces (of these, 7 were from the 2nd class).. . . .	14
Commissioned in reserve of officers.. . . .	17
Withdrawn for various causes.. . . .	7
	<hr/>
Total decrease.. . . .	41

Twenty-seven gentlemen cadets joined in September, 1905. These changes leave a present strength of 82 gentlemen cadets.

## CONDUCT AND DISCIPLINE.

The conduct and discipline of the gentlemen cadets have been good.

## EXAMINATIONS.

The results of the midsummer examinations have been good, and in the case of the 1st class, particularly so.

As suggested by the late commandant, two professors are now employed for 'Physics' and 'Civil Surveying' with good results, but owing to the size of the classes I have recommended an increase in the number of instructors from two to four, as at present it is impossible to fully carry out that individual instruction which is so desirable a feature of the work at the Royal Military College.

## DRILLS AND EXERCISES.

A good standard has been maintained in drills and exercises.

The cadets were again prevented from going into camp for gun practice. If my proposal to take the cadets into camp for about four weeks in the summer be approved there will be opportunity for much useful practical work.

The excellent work carried out in the gymnasium shows how much a well appointed building, as this is, leads to improved work being done.



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Great interest has been taken in musketry, and I have pleasure in notifying that the government of the Province of Ontario has again presented the college with the sum of \$100, showing that the advantages of the Royal Military College, and the importance of rifle-shooting, are fully recognized by the people of Ontario.

### OFFICERS' LONG COURSE.

Two long courses of instruction have been held during the year, from March to May, and from October to December, respectively.

Twenty-four officers attended, of whom twenty obtained 1st class certificates. In addition, eleven officers of the permanent corps attended the courses in order to prepare for their promotion examinations.

### NEW BUILDINGS.

The construction of new servants' quarters, quarters for the riding-establishment, and the new drill hall (available for skating), will, I hope, be soon begun. These are urgently required.

### RETIRING MEMBERS OF THE STAFF.

During the year the following members of the staff have left the Royal Military College:—

Colonel R. N. R. Reade, Commandant.  
Major Buchanan-Dunlop, R.A.  
Major Hewett, Royal West Kent Regiment.

And I regret to have to record the death of Captain Chartrand, Professor of French.

### COMMISSIONS.

The following gentlemen obtained commissions:—

E. J. C. Schmidlin, Royal Engineers.  
H. Holmes, Royal Garrison Artillery.  
A. H. Jukes, Indian Army.  
Le Roy Grant, Royal Canadian Garrison Artillery.  
W. G. Beeman, Royal Canadian Garrison Artillery.  
C. F. Constantine, Royal Canadian Horse Artillery.  
W. H. P. Elkins, Royal Canadian Horse Artillery.  
G. St. A. Perrin, Royal Canadian Horse Artillery.  
S. G. Bacon, Royal Canadian Garrison Artillery.  
A. E. Harris, Royal Canadian Garrison Artillery.  
E. B. Irving, Royal Canadian Garrison Artillery.  
H. E. Boak, Royal Canadian Horse Artillery.  
A. D. Irwin, Royal Canadian Garrison Artillery.  
L. W. Cockburn, Royal Canadian Garrison Artillery.  
A. S. Wright, Royal Canadian Garrison Artillery.



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## DIPLOMAS OF GRADUATION.

Diplomas of graduation have been awarded the following gentlemen cadets of the first-class:—

B. S. M. Schmidlin (honours), Sergeant McPhee (honours), Sergeant Smith (honours), Corporal Watts (honours), C. S. M. Grant (honours), Sergeant Perrin, C. S. M. Constantine, Corporal Wright, Sergeant Hammond, Corporal Elkins, Cadet Mathieson, Cadet Jukes, Sergeant Harrington, Sergeant Macklem, Cadet Loggie, C. S. M. Gill, C. S. M. Ross, Cadet Hall, Sergeant Goldie, Sergeant Gillies, Cadet Beeman, Corporal Holmes, Cadet Starr, Cadet Girouard, Corporal Canfield, Corporal Curry.

## ANNUAL PRIZES.

The College prizes awarded during the year have been won as follows:—

Gold Medal, B. S. M. Schmidlin.

Silver Medal, Sergeant McPhee.

Bronze Medal, Sergeant Smith.

The Sword of Honour prize for conduct, drills and exercises, B. S. M. Schmidlin.

Class prizes for the highest number of marks in each class:—

1st class, B. S. M. Schmidlin.

2nd class, Gentleman Cadet Gemmill.

3rd class, Gentleman Cadet Rhodes.

Subject prizes for the highest number of marks in the several subjects:—

In the 1st class B. S. M. Schmidlin won the Sword of Honour for conduct, drills and exercises, and the prizes for military engineering, civil surveying, drills and exercises, and Sergeant McPhee won the prize for tactics, reconnaissance and conduct.

In the 2nd class Corporal Gemmill won the prize for mathematics, engineering, drawing and military surveying, Gentleman Cadet Macrae the prizes for artillery and military administration, Gentleman Cadet Budden the prize for French, Gentleman Cadets Budden and Gemmill are equal for the English prize.

In the 3rd class Gentleman Cadet Hammond won the prize for French and Gentleman Cadets Rhodes and Cowley were equal for the English prize.

The Dominion Artillery Association prizes were won by Sergeant McPhee and C. S. M. Grant.

The Commandant's musketry prize, young soldiers' course, by Gentleman Cadet Rhodes.

The Dundonald Mounted Patrol Competition was won by B Company (Sergeant Harrington, Sergeant McPhee, Cadet Hall, Corporal Canfield).

I have the honour to be, sir,

Your obedient servant.

E. T. TAYLOR, Lt.-col.,

*Commandant, R. M. College*



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## APPENDIX IV.

## REPORT OF SUPERINTENDENT OF THE DOMINION ARSENAL.

QUEBEC, November 28, 1905.

To the Honourable  
The Minister of Militia and Defence.

SIR,—I have the honour to report as follows upon the operations of this establishment for the fiscal year ended June 30, 1905.

## CARTRIDGE FACTORY.

The output this year, the largest since the factory has been in operation, has been productive of very satisfactory administrative results. As is well known, it is easier to control manufacture on a large scale than with small production. We now have a complete staff of trained hands, and the quantity of work admits of each individual being continuously employed on one operation or class of work, resulting in increased skill and facility of production.

A special lot of cartridges, loaded from one batch of cordite, was manufactured specially for the annual matches of the Dominion Rifle Association, and it appears, on the whole, to have given satisfaction.

In every country, match ammunition is made with much greater attention to minute details than service ammunition; its cost is thereby very greatly increased, while the difference in accuracy is exceedingly small, and obtained at the risk of developing dangerous pressures in the chamber.

Some minor complaints were received which, with one exception, may be passed over.

A misapprehension gave rise to the belief, among many competitors, that the bullets varied greatly in diameter, and in consequence, those that were considered too small, or 'low' in diameter, were rejected. The method of gauging which the riflemen adopted was to place the bullet in the muzzle of the rifle, retaining those only that appeared to be uniform.

The reason for the different sizes is that the insertion of the bullet into the case varies slightly within definite manufacturing limits. As the point of the bullet is tapered, it follows that the diameter will decrease with the amount of insertion and *vice versa*.

The cylindrical portion of the bullet which seals the escape of the gas and takes the rifling, lies within the cartridge case, and is therefore inaccessible without extracting the bullet. All .303 service bullets are manufactured within limits that vary by only plus or minus one thousandth of an inch.

It may be well to state that the human eye is incapable of appreciating such minute dimensions, and they are measurable only with the aid of a micrometer. The cartridges in question were up to the standard of the War Office specifications governing the manufacture of ammunition for the Imperial service, and may therefore be considered as suitable for purposes of military training and defence.

The manufacture of Mark I., gallery-practice cartridges, loaded with black powder, has been discontinued, and after prolonged trials, a cartridge firing smokeless powder, with a bullet of new pattern, has been designed. The accuracy of this cartridge is greatly superior to that of Mark I. An improved machine has been designed



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for extracting percussion caps by hydraulic pressure, which will greatly reduce the cost of a hitherto troublesome operation. This, together with other improvements in manufacture, will permit of the production of this cartridge at lower cost than Mark I., notwithstanding the greater expense of using smokeless powder.

By far the most important work undertaken during the year, has been a study of the methods of annealing brass and cupro-nickel, together with the micro-structure of copper alloys, subjected to heat treatment. A muffled furnace, built after an English design, for use with soft coal, entailed an enormous expenditure of fuel, and could not be operated to give uniform results; as neither gas nor oil was available, coke was used. To economize fuel the muffle was discarded, and a furnace was especially designed, embodying the main features of gas, or oil-fired, furnaces.

The experiment involved a certain risk, but after six months continuous operation, it may be claimed that the results, both as regards cost and quality of work, have far exceeded expectations. To control the temperature of this furnace, a Uehling-Steinbart pneumatic recording pyrometer has been purchased. This instrument furnishes a continuous record of temperature and time of annealing, in the form of a chart, which is examined daily for the regulation of subsequent processes.

The results obtained have been highly satisfactory, and not a single batch of brass has been over-annealed since it was taken into use. As each furnace load is worth about \$200 and some thousands of annealings are made during the year, the saving effected by this means is very considerable. The usual method of judging high temperatures is to observe the colour of the furnace and metal under treatment.

A comparison of colours with instrumental records, leads to the conclusion that a trained observer will make errors amounting to 200° C., and that consequently such a method is absolutely worthless.

In many works annealing is performed under the supervision of labourers of experience, who, after long service are rated as so-called experts. The disadvantage of placing in the hands of labourers processes affecting the character of the entire output is evident, and the instrument referred to dispenses entirely with such experts.

In consequence of these changes, burst cartridge cases, which formerly caused so much trouble, are now exceptional; only three or four having occurred during the past six months. While the process of annealing metal in the form of strip may be considered satisfactory, that employed for cases between drawing operations is only fairly so, and the best results obtainable will only be got by the construction of a gas plant.

The rolling mill is now in full operation, and the increased demands for ammunition will insure that this portion of the plant is kept continuously employed. Experiments have been made with a view to removing metallic fouling which accumulates in the bore of rifles firing bullets with hard metal envelopes, such as the service bullet, with satisfactory results. The regulation method is to use a wire pull-through, which virtually files away the accumulated metal, at the same time subjecting the bore to unnecessary wear. Various secret mixtures are on the market for this purpose.

## SHELL FACTORY.

The shell factory has been continuously employed in the manufacture of 12-pr. B. L. shrapnel shells. The advent of high speed steels has made it possible to greatly reduce the cost of manufacturing these projectiles. The manufacture of forged steel bodies was started with 4-inch round steel, necessitating five forging operations and three heats; this has been replaced by employing 3½-inch steel, by which bodies are forged in two operations and one heat.

The cost of production will be reduced in proportion. The bodies of these shells are now finished on turret lathes, at a speed that compares very favourably with what has been seen elsewhere, but orders have been placed for automatic machines, which are guaranteed to greatly reduce time and cost of manufacture. These machines are expected daily, and will be put into operation as soon as received.



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Several minor improvements have been made in machining operations, among which may be mentioned the entire elimination of drilling, which has been replaced by punching on all operations but one; the saving from this will be considerable.

A machine has been built for forming shrapnel bullets, which were formerly cast in moulds. The new machine cuts the bullets from lead rod, squirted in the usual manner, and presses them to the required shape. The bullet produced is perfect in form, regular in weight, and requires no subsequent drumming, as was the case with cast bullets.

#### ARTILLERY WORKSHOP.

All repairs to machinery, tools and equipment have been carried out in this department. The manufacture of boxes, rifle chests and tin work has proceeded as usual. It is now quite clear that the plant could not be operated without the assistance derived from this workshop, and as doubts as to its necessity at one time existed, it will be gratifying to know that the expenditure incurred has been expended to the best advantage. Additional crucible furnaces are being built in the iron foundry, the existing furnaces being insufficient. As soon as they are completed a full staff of men will be engaged.

#### ADDITIONS TO PLANT.

The following machinery has been purchased during the year:—

- 1 Bar shearing machine.
- 1 Drill grinder.
- 1 4½-inch cutting-off machine.
- 1 Moulding machine.
- 1 Bar folder.
- 1 Uehling-Steinbart, pneumatic recording pyrometer.

Necessary purchase of loose tools, for additions and replacements were made as usual.

#### GENERAL.

The additional work now carried on at the Arsenal has necessitated a large increase in the quantity of raw material to be kept on hand. The storage room available is entirely inadequate, necessitating our stocking materials in the open that should be under cover. Owing to circumstances beyond our control, the store building asked for three years ago has not yet been erected.

The equipment of machine tools in the workshop and tool room is insufficient for present requirements, causing serious delays in the execution of important work. It is hoped that provision will be made in the estimates for the ensuing fiscal year for the purchase of necessary machines.

The chemist has been kept constantly employed in testing materials and controlling the quality of the output during manufacture. Most valuable work has been performed, and it is felt that the high standard called for by the official specifications has been fully maintained.

A properly equipped draughting office in charge of a competent designer is much required. At the present time much work is done from rough sketches, made by the foreman or anyone who can spare the time. This method results in much unauthorized work being done and it is wasteful in the extreme. Alterations are being made in our system of book-keeping, with a view to assimilating our figures as closely as possible with those of the Royal Ordnance factories. It is considered of importance that the department should have accurate information as to the relative cost of manufacturing locally and of importing from abroad. It has been invariably found, when



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the quantity of articles has been sufficiently large. that it is to the advantage of the government to manufacture locally.

Important extensions to the Arsenal are under consideration for next year, which will enable the department to spend for the benefit of our own work-people, money hitherto expended abroad, in addition to strengthening our military position by making us less dependent on outside sources of supply.

I take pleasure in expressing my appreciation of the fidelity and efficiency which has characterized the service of the staff during the year.

Following is a statement of ammunition manufactured during the year :

Caps, percussion, .303" . . . . .	3,000
Cartridges, S. A. ball, .303", gallery practice . . . . .	1,000,000
"    S. A. ball, .303", cordite, mark VI . . . . .	8,143,300
"    S. A. blank, .303", black powder, mark II., converted . . . . .	156,000
"    B. L. 15 or 12-pr. 1½ lbs., blank, filling . . . . .	2,000
"    B. L. .5" gun or howitzer, 3 lbs., blank, filling . . . . .	220
"    B. L. empty, 15 or 12-pr. 1½ lbs., blank . . . . .	5,000
"    S. B. empty, 24-pr. 3 lbs., blank . . . . .	3,000
"    Q. F. 12-pr. 12-cwt. cases, empty, rectifying and cleaning . . . . .	1,320
"    B. L. filled 12-pr. 6 cwt., cordite mark II . . . . .	7,480
Covers, cartridge, canvas, B. L. 12-pr. 6 cwt., mark I . . . . .	3,200

In addition to ammunition manufactured as above, large numbers of ammunition boxes and other stores were manufactured, and many cartridges, limbers and other articles were altered or repaired.

I have the honour to be, sir,

Your obedient servant,

(Sgd.) F. M. GAUDET, Lt.-col.

*Superintendent Dominion Arsenal.*



